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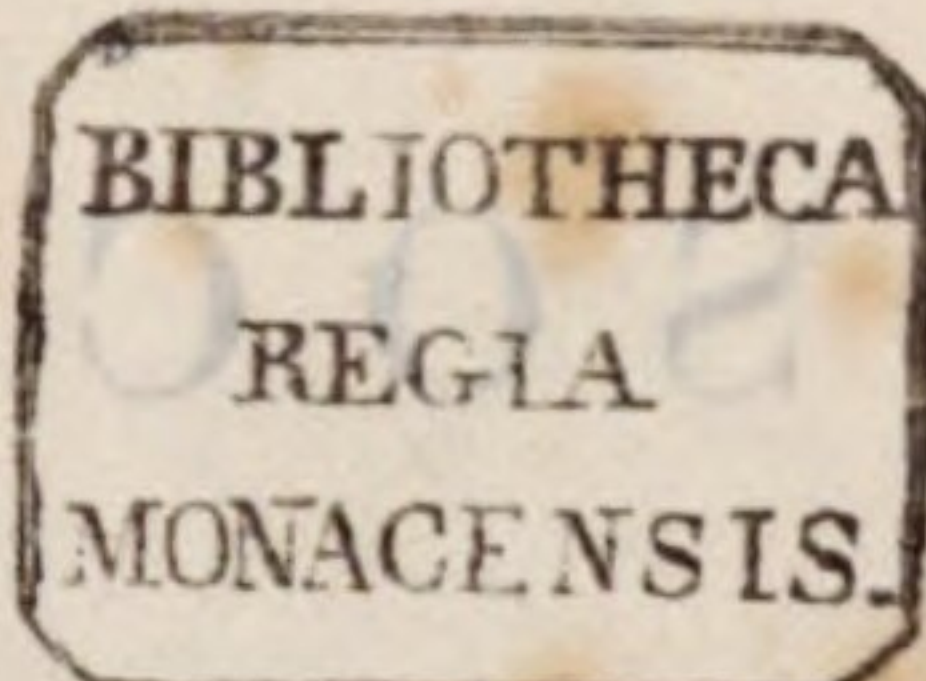


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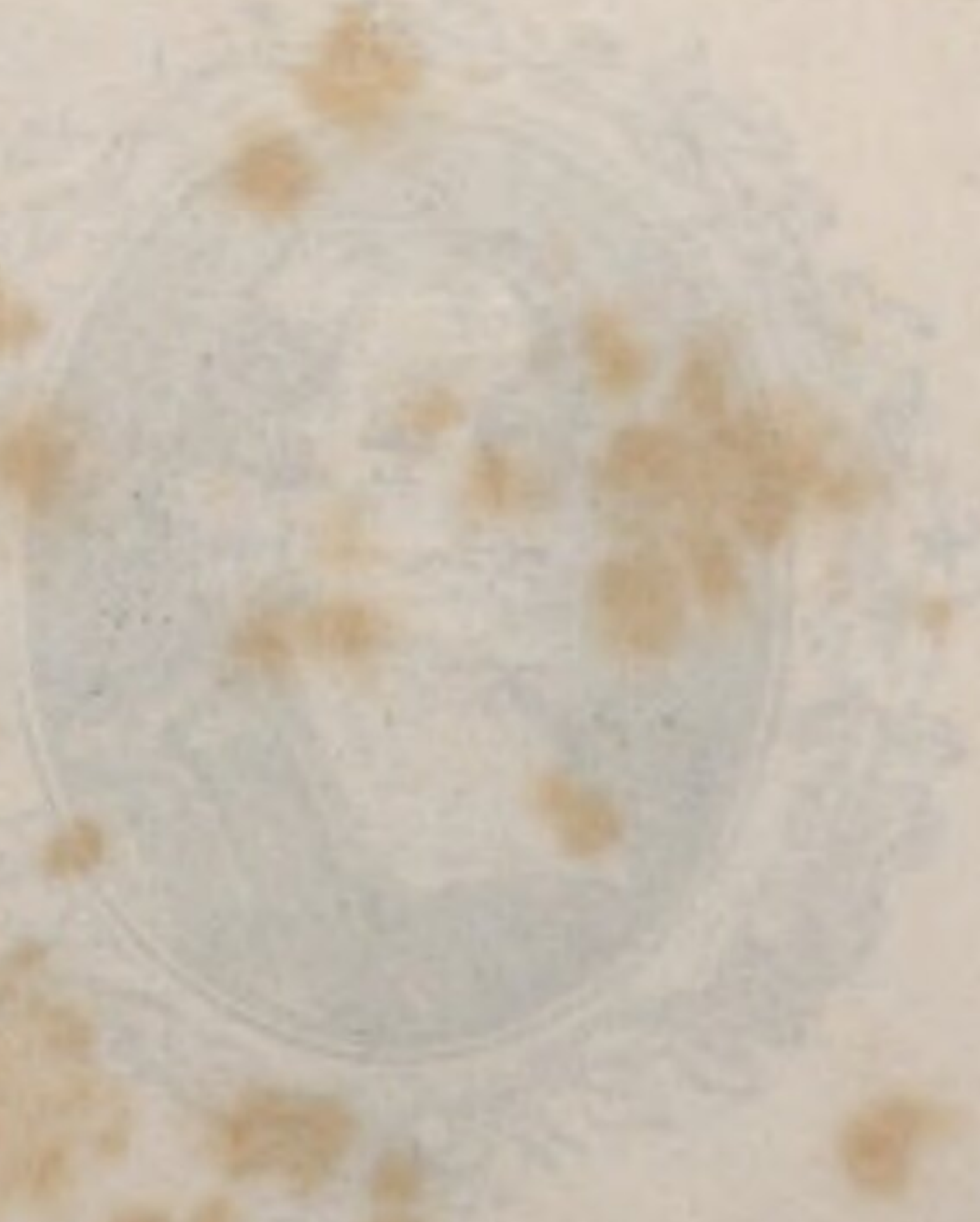
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A HISTORY
OF THE
SPIDERS
OF
GREAT BRITAIN AND IRELAND.

BY
JOHN BLACKWALL, F.L.S.

"CUM AUTEM PLERAQUE, QUE HIC HABENTUR, AD FIDEM SENSUS REFERRI POSSINT, IN ID MAXIMÈ INCUBUI, NE IPSÆ PRIMÙM DECEPTUS, POSTEROS IN ERROREM DUCEREM. SUMMAM SANÈ DILIGENTIAM ADHIBUI, UT VERAS SPECIES DISTINGUENDO, NON MULTIPLICANDO CITRA NECESSITATEM, SINGULAS, MINUTISSIMIS LICET, FIDISSIMIS TAMEN OBSERVATIONIBUS, QUÆ AD ANIMALIUM MORES VITAMQUE SPECTARENT, EXORNAREM."

LISTER, *Hist. Animal. Angl.*, ad lectorem, p. 2.

PART II.

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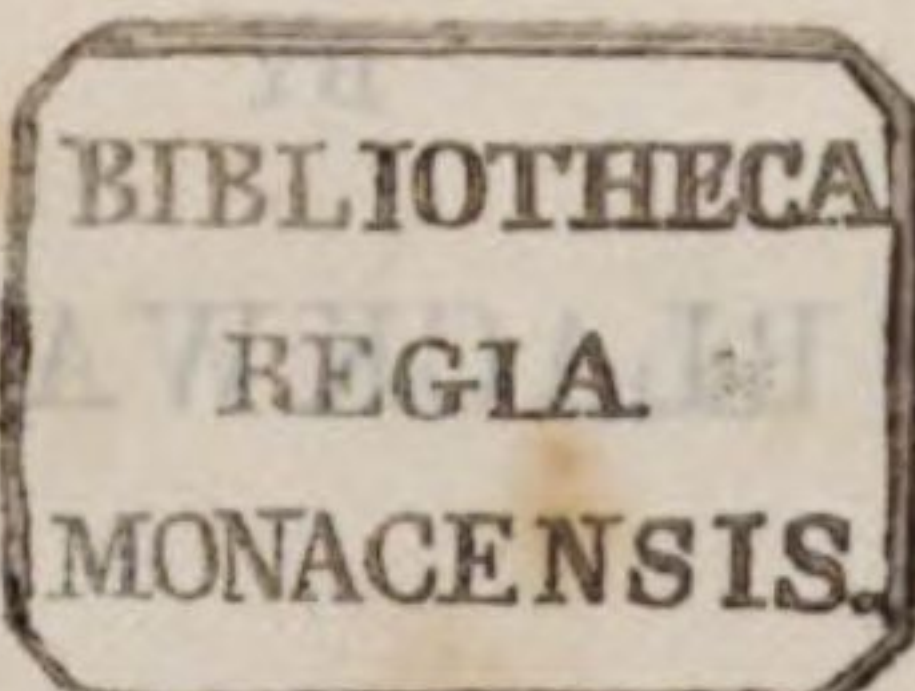
A HISTORY

OF THE

SPIRITS

OF

GREAT BRITAIN AND IRELAND.



THE HISTORY OF THE SPIRITS OF GREAT BRITAIN AND IRELAND, AS FAR AS THEY ARE KNOWN TO THE PRESENT TIME, BY JOHN W. ADLARD, ESQ. OF THE BARR, LINCOLN'S INN. LONDON: PRINTED BY J. B. ADLARD, AT THE SIGN OF THE 'GOLDEN LION,' IN ST. MARTIN'S LANE. 1845.

PART II.

LONDON:

PUBLISHED BY THE SOCIETY OF

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ROBERT HARRIS, PICCADILLY.

BARTHOLOMEW CLOSE.

WINDMILL

Family THERIDIIDÆ.

Much diversity in the brilliancy and disposition of their colours is observable among the spiders of this family. They have the falces articulated vertically, or on an inclined plane, and the abdomen is furnished with three pairs of spinners and two branchial opercula. The legs differ considerably in length in different species, and the tarsi are terminated by three or more claws, the additional ones, when present, being very minute.

Trees, shrubs, herbage, interstices in rocks and walls, the inferior surface of stones, and the inside of buildings are the haunts most congenial to the *Theridiidæ*, which have a wide geographical distribution. Their snares consist of fine lines intersecting one another in different planes and at various angles; in extent and complexity they are greatly diversified, and present the appearance of being constructed without any regular plan.

Genus THERIDION (*Walck.*).

Eyes disposed on the anterior part of the cephalo-thorax in two transverse, converging rows; they do not differ greatly in size, and the four intermediate ones usually form a square, but in some instances they describe a trapezoid.

Maxillæ long, inclined towards the lip, and obliquely truncated at the extremity, on the outer side.

Lip short, semicircular, triangular, or quadrate.

Legs either long and slender, or of moderate length and strength; the first pair is usually the longest, then the fourth pair, which sometimes exceeds the first in longitudinal extent, and the third pair is the shortest.

THERIDION LINEATUM. Pl. XIII, fig. 111.

Theridion lineatum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 285.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 337.

redimitum, Latr., Gen. Crust. et Insect., tom. i, p. 97.

— — Hahn, Die Arachn., Band i, p. 86, tab. 21, fig. 65.

ovatum, Sund., Vet. Acad. Handl., 1831, p. 113.

Theridium redimitum, Koch, Die Arachn., Band xii, p. 133, tab. 427, figs. 1053—1055.

Steatoda redimita, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 9.

Titulus 12, Lister, Hist. Animal. Angl. De Aran., p. 51.

Length of the female, $\frac{1}{3}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{9}{20}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The eyes are seated on black spots; four, which are intermediate, form a square, the two anterior ones being rather the smallest of the eight, and those constituting each lateral pair are placed on a tubercle and are almost contiguous. The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, and has a large indentation in the medial line; the falces are conical, vertical, and armed with a few teeth on the inner surface; the maxillæ are inclined towards the lip, which is semicircular; and the sternum is heart-shaped; the legs are long and slender; the first pair is the longest, then the fourth, and the third pair is the shortest. These parts, with the palpi, which are short, are of a pale-yellowish colour, faintly tinged with green; the cephalo-thorax has fine, black, lateral margins, and a dark, obscure band extending along the middle; the sternum also has fine, black, lateral margins, and a medial line of the same hue; and the anterior legs have a black annulus at the extremity of the tibia. The two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. Each palpus has a curved, pectinated claw at its extremity. The abdomen is subglobose, glossy, sparingly supplied with hairs, very convex above, and projects over the base of the cephalo-thorax; it is of a pale, yellowish-white colour, with a dark, ramified line extending along the middle of the upper part, and two rows of small, black, indented spots on each side, which converge to the spinners, the outer row being usually the more conspicuous; two black spots occur on each side of the spinners, and a broad black band occupies the middle of the under part; the sexual organs, which are small, have a dark, reddish-brown hue; and the colour of the branchial opercula is yellow, their posterior margin having a reddish-brown tint.

Two handsome varieties of *Theridion lineatum* have been described by arachnologists as distinct species. One, *Theridion redimitum*, has a line of a carmine hue on the upper part of the abdomen, which describes a large oval; and the other, *Theridion ovatum*, has the entire oval space of a carmine colour.

The male is smaller than the female, which it resembles in colour, but its legs are longer, an anterior one measuring nine sixteenths of an inch. The falces are long, widely divergent at the extremity, provided with a large, pointed process near the base, on the under side, and are terminated by a long fang abruptly curved near its extremity. The radial joint of the palpi is larger than the cubital and clavate; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, complicated in structure, with a curved, black spine on the outer side, and a shorter one at the extremity, and are of a red-brown colour. The convex sides of the digital joints are directed towards each other.

This common spider, remarkable for its variation in colour, spins among coarse herbage and the stems of shrubs numerous fine, glossy lines, intersecting one another in different planes and at various angles, which constitute a snare similar in design to the toils constructed by the *Theridia* generally. It pairs in June, and in July the female deposits about 170 spherical eggs, of a yellowish-white colour, not agglutinated together, in a globular cocoon of bluish-white, blue, or greenish-blue silk, of a loosish texture, measuring one fourth of an inch in diameter. The cocoon is enclosed in a slight tissue of white silk connected with the inferior surface of the leaves of trees and shrubs, the edges of which are convolved about it and are retained in that position by silken lines. The young remain a long time in this nidus with the female, and are supplied by her with food.

M. Koch, in transferring that variety of *Theridion lineatum* named *redimitum* to the genus *Steatoda* of Professor Sundevall ('Conspectus Arachnidum,' pp. 16, 17), lapsed into an inconsistency which M. Walckenaer has pointed out in his 'Hist. Nat. des Insect. Apt.,' t. ii, p. 288, and which he himself has subsequently corrected.

This species abounds in Scotland and Ireland.

THERIDION QUADRIPUNCTATUM. Pl. XIII, fig. 112.

Theridion quadripunctatum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 290.

— — Hahn, Die Arachn., Band i, p. 78, tab. 20, fig. 58.

— — Sund., Vet. Acad. Handl., 1831, p. 118.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 337.

Steatoda quadripunctata, Sund., Consp. Arachn., pp. 16, 17.

Eucharia bipunctata, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 7.

— — Koch, Die Arachn., Band xii, p. 99, tab. 418, fig. 1027.

Phrurolithus ornatus, Koch, Die Arachn., Band vi, p. 114, tab. 208, fig. 515.

Titulus 11, Lister, Hist. Animal. Angl. De Aran., p. 49, tab. 1, fig. 11.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{4}$ th, breadth, $\frac{1}{12}$ th; breadth of the abdomen, $\frac{3}{10}$ ths; length of an anterior leg, $\frac{1}{3}$ rd; length of a leg of the third pair, $\frac{1}{2}$ th.

The four intermediate eyes form a square, the two anterior ones, which are the largest of the eight, being seated on a protuberance; those constituting each lateral pair are placed obliquely on a small tubercle, and are almost contiguous. The cephalo-thorax is convex, glossy, slightly compressed before, rounded on the sides, and has an indentation in the medial line; it is sparingly supplied with short hairs, and of a dark-brown colour. The falces are small, conical, vertical, and armed with a few teeth on the inner surface; the maxillæ are enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular; and the sternum is heart-shaped. These parts have a reddish-brown tint. The legs are moderately long, provided with hairs and fine spines, and are of a red-brown hue, with brownish-black annuli; the first pair is the longest, then the fourth, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is somewhat oviform, rather depressed, glossy, sparingly clothed with hairs, and projects over the base of the cephalo-thorax; the upper part, which is of a pale-brown colour, is encompassed by a broad, dark-brown band, which passes above the spinners; the anterior part of this band comprises a curved, transverse, yellowish-white line; an obscure line of the same hue extends along the middle, and a transverse, curved, yellowish-white line occurs between the posterior part of the dark-brown band and the spinners; a longitudinal series of small circular indentations, two pairs of which are more conspicuous than the rest, occurs on each side of the medial line; the sides, below the dark-brown band, and the under part have a pale-brown tint; a band of a darker brown colour extends along the middle of the latter, and a line of the same hue encircles the spinners; the colour of the branchial opercula is red-brown.

The white marks on the abdomen of this spider are liable to vary in form, size, and number.

The male is smaller than the female, but it resembles her in colour. The abdomen is prominent at its extremity, on the under side, and there is a small transverse fold near its middle, which connects the posterior margins of the branchial opercula. The cubital and radial joints of the palpi are short and provided with numerous long hairs, the former, which is rather the longer, being abruptly inflected near its base; the digital joint has a dark-brown hue, and is somewhat oval, being obliquely truncated on the inner side, towards the extremity; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a large crescent-shaped process at their extremity, whose longer and more pointed limb extends a little beyond the end of the joint, and within the crescent the slender extremity of a long, curved, pointed spine appears; their colour is dark, reddish-brown. The convex sides of the digital joints are directed towards each other.

Crevices in walls and rocks, and interstices among stones, are the haunts selected by this species, which occurs in many parts of England and Wales. It pairs in May, and in June the female constructs a globular cocoon, of yellowish-white silk, of a loose texture, measuring three twentieths of an inch in diameter; it is usually attached to objects situated in the vicinity of her snare, and contains about fifty spherical eggs of a pinkish colour, not agglutinated together.

A female *Theridion quadripunctatum* placed in a phial which was closely corked and

locked up in a book-case, continued to exist without receiving any nutriment whatever from the 15th of October, 1829, to the 30th of April, 1831, when it died. That so voracious an animal should be capable of enduring abstinence from food for so long a period is certainly an extraordinary fact.

THERIDION SISYPHUM. Pl. XIII, fig. 113.

Theridion Sisyphum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 298.

— — Latr., Gen. Crust. et Insect., tom. i, p. 97.

— — Hahn, Die Arachn., Band ii, p. 47, tab. 58, fig. 132.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 338.

— *lunatum*, Sund., Vet. Acad. Handl., 1831, p. 111.

Theridium — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 8.

— — Koch, Die Arachn., Band viii, p. 74, tab. 273, fig. 645.

— — Koch, Die Arachn., Band xii, p. 137, tab. 429, figs. 1060, 1061.

Steatoda lunata, Sund., Consp. Arachn., pp. 16, 17.

Titulus 14, Lister, Hist. Animal. Angl. De Aran., p. 53, tab. 1, fig. 14.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{1}{3}$ rd; length of a leg of the third pair, $\frac{5}{16}$ ths.

The four intermediate eyes form a square, the two anterior ones, which are the largest and darkest of the eight, being seated on a protuberance; those of each lateral pair are placed obliquely on a small tubercle and are nearly contiguous. The cephalo-thorax is convex, glossy, slightly compressed before, rounded on the sides, and has a large indentation in the medial line; the falces are small, conical and vertical; the maxillæ are inclined towards the lip, which is semicircular; and the sternum is heart-shaped, with small eminences on the sides, opposite to the legs. These parts are of a red-brown colour, the sternum being the palest and the lip the darkest. The legs are moderately long, provided with hairs, and of a pale, reddish-brown hue, with obscure annuli of a deeper shade at the joints; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are short, and resemble the legs in colour; the digital joint, which is the darkest, having a curved, pectinated claw at its extremity. The abdomen is sparingly clothed with hairs, pointed at the spinners, very convex above, and projects over the base of the cephalo-thorax; on the upper part various shades of ferruginous, black, and yellowish-white colours are distributed in lines, streaks, and spots; near the summit of the convexity two long, curved, yellowish-white lines meet in an angle whose vertex is directed forwards; before the angular point two streaks of the same hue extend towards the cephalo-thorax, comprising between them a black space mottled with ferruginous; and within the angle there

are two yellowish-white spots on a black ground, each of which is succeeded by an oblique line of the same hue, directed towards the anus; above the spinners a large, oval, ferruginous space occurs, and the colour of the sides is ferruginous mingled with black; the under part has a dark-brown tint, with a pale-yellow spot above the outer margin of each branchial operculum, another immediately below the sexual organs, and an irregular, transverse bar of the same hue nearer to the spinners; the colour of the sexual organs is brownish-black, and that of the branchial opercula dull, reddish-brown.

The male is much smaller, darker coloured, and less distinctly marked than the female. The cubital and radial joints of its palpi are short; the digital joint is oval, with a pointed process at its base, which falls into a notch in the radial joint; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, and have a curved process at their extremity which projects beyond the end of the joint; their colour is red-brown.

This species occurs in the south of England, and was observed by Lister in Cambridge-shire, Lincolnshire, and Yorkshire. He remarks that it fabricates an extensive snare on the trunks of large oaks and between the greater branches of trees; and that towards the end of June the female usually constructs in this snare a dome-shaped cell, whose concavity is directed downwards, in which she deposits one or more lenticular cocoons, of a red-brown colour, containing her eggs.

THERIDION TEPIDARIORUM. Pl. XIII, fig. 114.

Theridion tepidariorum, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 117.

Theridium — Koch, Die Arachn., Band viii, p. 75, tab. 273, fig. 646; tab. 274, figs. 647, 648.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{10}$ th; breadth of the abdomen, $\frac{1}{5}$ th; length of an anterior leg, $\frac{7}{10}$ ths; length of a leg of the third pair, $\frac{3}{10}$ ths.

The four intermediate eyes form a square, the two anterior ones, which are the largest and darkest of the eight, being seated on a protuberance; those constituting each lateral pair are placed on a small tubercle, and are nearly contiguous. The cephalo-thorax is convex, glossy, slightly compressed before, rounded on the sides, and has a large indentation in the medial line; the falces are small, conical, and vertical; the maxillæ are inclined towards the lip, which is semicircular; and the sternum is heart-shaped, with small eminences on the sides opposite to the legs. These parts are of a dark, reddish-brown colour; the falces, maxillæ, and lip being the palest. The legs are long, provided with hairs, and of a yellowish-brown hue, with dark-brown annuli; the first pair is the longest, then the fourth, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi are short, of a pale, yellowish-brown colour,

with the exception of the digital joint, which has a reddish-brown tint, and are terminated by a curved, pectinated claw. The abdomen is thinly clothed with hairs, pointed at the spinners, very convex above, and projects over the base of the cephalo-thorax; on the upper part various shades of yellowish-brown, black, and yellowish-white colours are distributed in lines, streaks, and spots; from the anterior part of the summit of the convexity a curved, yellowish-white line extends on each side, two shorter ones are directed towards the spinners, and others, more or less curved, towards the cephalo-thorax; on the posterior half there is a large, yellowish-brown space, bordered irregularly with black, and intersected by transverse, curved, black bars and lines; the sides are of a yellowish-brown colour, streaked and spotted with black, and the under part, which has a brownish-black tint, is marked with a yellowish-brown spot, freckled with white, above the outer margin of each branchial operculum, another below the sexual organs, and an irregular, transverse bar of the same hue nearer to the spinners; the sexual organs are conspicuous, and have a dark, reddish-brown tint; and the colour of the branchial opercula is yellow. This species varies considerably in colour, but the characteristic marks on the abdomen are always more or less apparent.

The male is much smaller, darker coloured, and less distinctly marked than the female; the relative length of its legs also is different, the second pair surpassing the fourth. The palpi are of a yellowish-brown colour, with the exception of the radial and digital joints, which have a dark-brown tint; the radial joint is larger than the cubital; the digital joint is somewhat oval, with a pointed process at its base, which falls into a notch on the inner side of the radial joint, and extends to its articulation with the cubital joint; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, not very complicated in structure, and are terminated by a strong, curved, corneous process, which projects beyond the extremity of the joint; they are of a red-brown colour.

Though *Theridion tepidariorum* has not been observed in the open air in this country, yet it is not uncommon in conservatories, where it constructs among the stems of plants, and in the angles formed by partitions, an extensive, complicated snare, somewhat of a pyramidal form, which consists of numerous fine, glossy lines, intersecting one another in different planes and at various angles. The sexes pair in June, and during the summer and autumn the female fabricates several balloon-shaped cocoons of different sizes, varying from one fifth to one third of an inch in diameter, which she suspends in the upper part of her snare, with the larger extremities downwards; they are composed of reddish-brown silk, of a fine but compact texture, and the largest of them sometimes comprises between four hundred and five hundred spherical eggs, of a pale, yellowish-white colour, not agglutinated together. Young spiders and cocoons containing eggs may frequently be seen in the snare at the same time.

In Germany, as in Britain, this species has only been met with in conservatories, a circumstance which has induced M. Koch to conjecture, with great probability, that it is not indigenous to that country, but that it has been introduced with exotic plants; and this conjecture applies with equal force to our own country. His words are, "Fast möchte ich diese Art als eine ursprünglich deutsche in Zweifel ziehen, indem sie, wie es scheint, nur in warmen Glashäusern vorkommt; vielleicht ist ihre Brut mit aussereuropäischen Pflanzen nach Deutschland gebracht worden" ('Die Arachn.,' B. viii, p. 78).

THERIDION RIPARIUM. Pl. XIII, fig. 115.

Theridion riparium, Blackw., Research. in Zool., p. 354.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 338.

— *saxatile*, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 328.

Theridium — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 8.

— — Koch, Die Arachn., Band iv, p. 116, tab. 141, figs. 324, 325.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{4}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{3}{10}$ ths; length of a leg of the third pair, $\frac{3}{20}$ ths.

In form and colour this species bears a close resemblance to *Theridion Sisyphum*, but may be distinguished from it by its smaller size and different economy. The cephalo-thorax is convex, glossy, slightly compressed before, rounded on the sides, and has a large indentation in the medial line; the falces are small, conical, and vertical; the maxillæ are inclined towards the lip, which is quadrate; the sternum is heart-shaped, and the palpi are short and robust. These parts are of a red-brown hue, the cephalo-thorax and sternum being much the darkest. The legs are moderately long and of a yellowish-brown colour, with broad, red-brown annuli. The four intermediate eyes form a square, the two anterior ones being seated on a protuberance; those constituting each lateral pair are placed obliquely on a small tubercle, and are contiguous. The abdomen is thinly clothed with hairs, pointed at the spinners, very convex above, and projects over the base of the cephalo-thorax; the upper part is of a red-brown colour, mottled with black and white, and bisected by an irregular, transverse, white line, interrupted in the middle by a triangular black spot, between which and the spinners there is a curved, transverse, black line; the under part, which has a brownish-black tint, is marked with a transverse band of red-brown near the spinners; and the colour of the branchial opercula is red-brown.

The male is much smaller, darker coloured, and less distinctly marked than the female, but the relative length of its legs is the same. The cubital and radial joints of its palpi are short; the digital joint is somewhat oval, with a pointed process at its base, which falls into a notch in the radial joint and extends to its articulation with the cubital joint; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, not very complicated in structure, and are of a red-brown colour. The convex sides of the digital joints are directed towards each other.

The economy of this species, which is evidently identical with the *Theridium saxatile* of M. Koch, is very remarkable. It spins under the projections of broken, precipitous banks in the woods about Oakland a snare composed of fine, glossy lines, arranged after the manner of the Theridia. The union of the sexes takes place in July, and in August the female fabricates a slender, conical tube of silk, of a very slight texture, measuring from one and a half to two and a half inches in length, and about half an inch in diameter at its lower extremity; it is

closed above, open below, thickly covered externally with particles of indurated earth, small stones, and withered leaves and flowers, which are incorporated with it, and is suspended perpendicularly in the snare by lines attached to its sides and apex. In the upper part of this singular domicile the female constructs several globular cocoons of yellowish-white silk, of a slight texture, having a mean diameter of about one eighth of an inch, in each of which she deposits from twenty to sixty small spherical eggs of a pale, yellowish-white colour, not agglutinated together. The young, after quitting the cocoons, remain a long time with the female, and are supplied by her with food, which consists chiefly of ants.

THERIDION NERVOSUM. Pl. XIII, fig. 116.

Theridion nervosum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 301.

— — Hahn, Die Arachn., Band ii, p. 48, tab. 58, fig. 133.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 442.

— *Sisyphus*, Sund., Vet. Acad. Handl., 1831, p. 115.

Theridium — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 8.

— — Koch, Die Arachn., Band viii, p. 73, tab. 273, fig. 644.

Titulus 13, Lister, Hist. Animal. Angl. De Aran., p. 51, tab. 1, fig. 13.

Length of the female, $\frac{1}{6}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{7}{10}$ ths; length of a leg of the third pair, $\frac{3}{16}$ ths.

The four intermediate eyes form a square, the two anterior ones, which are the darkest and rather the largest of the eight, being seated on a protuberance; those constituting each lateral pair are placed obliquely on a small tubercle and are nearly in contact. The cephalo-thorax is convex, glossy, slightly compressed before, rounded on the sides, and has a large indentation in the medial line; it is of a dull-yellow colour, with dark, reddish-brown lateral margins, and a broad band of the same hue extending along the middle. The falces are conical, vertical, and have a yellowish-brown tint. The maxillæ are convex at the base, strongly inclined towards the lip, and of a pale, red-brown colour. The lip is semicircular, and has a brownish hue. The sternum is heart-shaped, and of a dull-yellow colour, with narrow, pale, red-brown margins. The legs are moderately long, provided with hairs, and have a yellowish-brown tint, with pale, red-brown annuli at the joints; the first pair is the longest, then the fourth, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi are short, of a yellowish-brown colour, and are terminated by a curved, pectinated claw. The abdomen is glossy, thinly clothed with hairs, subglobose, pointed at the spinners, and projects over the base of the cephalo-thorax; in the medial line of the upper part there is a broad, pale, red-brown band, which is thickly spotted with white anteriorly, and comprises a longitudinal, yellowish-white line situated above the anus; this band is bounded on each side by a broad,

brownish-black band, intersected by several white lines; the sides have a brownish or greenish-yellow hue, and are densely mottled with white at the upper part, contiguous to the outer margin of the brownish-black bands; an obscure, red-brown line extends in a sharp curve from their anterior extremity to the under part, which has a dull-yellow or greenish-yellow tint; a brownish-black angular line, having its vertex directed forwards, is situated immediately before the sexual organs, and a spot of the same hue occurs near the spinners; the sexual organs are small, and of a dark, reddish-brown colour; and the branchial opercula have a yellow tint. This species varies in colour, some individuals being much darker than others, but the white lines which intersect the brownish-black bands on the upper part of the abdomen are generally present.

The sexes are similar in colour, but the male is smaller than the female, and the design on its oviform abdomen is less distinctly marked. The colour of its palpi is yellowish-brown, with the exception of the digital joint, which has a dark, reddish-brown tint; the humeral joint is very gibbous near the base, on the outer side, and on this enlargement there are numerous short, black spines, each of which is terminated by a fine hair; the cubital and radial joints are short, the latter being produced at its extremity, on the outer side; the digital joint is oval, convex, and hairy externally, concave within, comprising the palpal organs, which are moderately developed, not very complex in structure, and of a dark, reddish-brown colour. The convex sides of the digital joints are directed towards each other.

A complex snare, having somewhat of a pyramidal form, is spun on trees, shrubs, gorse-bushes, and heath, by this common spider, which is widely distributed in Great Britain and Ireland. It pairs in June, and in July the female constructs a globular cocoon of dull-green silk, of a loose texture, measuring one eighth of an inch in diameter, which includes from thirty to forty small, yellowish-white, spherical eggs, not adherent among themselves. This cocoon is placed under a shallow, dome-shaped canopy of silk, about which withered leaves, flowers, and the remains of insects are accumulated; it is situated among the foliage near the upper part of the snare, and in this nidus the young live amicably together with the female till they are capable of providing for themselves, when they separate.

Like its congeners, this species envelops with lines drawn from the spinners by means of the posterior legs such insects as are too powerful for it to attack when first entangled in its toils.

THERIDION PICTUM. Pl. XIII, fig. 117.

Theridion pictum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 304.

— — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 489.

— — Hahn, Die Arachn., Band i, p. 90, tab. 22, fig. 68.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. xiv, p. 31.

Steatoda — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 9.

Theridium — Koch, Die Arachn., Band xii, p. 139, tab. 429, figs. 1062, 1063.

Length of the female, $\frac{3}{16}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{2}{3}$ ths; length of a leg of the third pair, $\frac{1}{3}$ th.

The legs are long, particularly those of the anterior pair, and have a yellowish-brown hue, with dark-brown annuli; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a small, curved, pectinated claw at their extremity. The cephalo-thorax is convex, glossy, compressed before, and rounded on the sides, which are marked with slight furrows converging towards a large indentation in the medial line; its colour is yellowish-brown, with broad, dark-brown, lateral margins, and a band of the same hue extending along the middle, which is contracted behind the cephalic region, and somewhat irregular in outline. The four intermediate eyes form a square; the two anterior ones are seated on a protuberance, and are the largest and darkest of the eight; those of each lateral pair are placed obliquely on a small tubercle and are contiguous. The falces are conical and vertical; and the maxillæ are convex at the base, obliquely truncated at the extremity, on the outer side, and inclined towards the lip. These organs have a reddish-brown tint. The lip is semicircular, and of a dark-brown hue. The sternum is of an elongated heart-shape, with minute prominences on the sides, opposite to the legs; it is glossy, and of a yellowish-brown colour, the margins, with the exception of the frontal one, having a dark-brown hue. The abdomen is oviform, sparingly clothed with short hairs, convex above, and projects over the base of the cephalo-thorax; the upper part is of a dark-brown colour, freckled with yellowish-brown, and a large, acutely dentated, red band, finely bordered with yellow, extends along the middle; this band tapers from its anterior part, which is triangular, to the spinners; the sides are of a pale-brown hue, freckled with yellowish-brown; the under part is of a brownish-black colour; and that of the branchial opercula is yellow; the sexual organs have a reddish-brown hue, and their posterior margin is prominent.

The male is smaller and slenderer than the female, but it resembles her in the design formed by the distribution of its colours. Its palpi, which are short, have a brownish-yellow hue, the digital joint being the darkest, and the colour of the palpal organs is red-brown.

Two adult females of this handsome *Theridion* were received from the Rev. Hamlet Clark in October, 1853. Both specimens were captured at Richmond in the autumn of the same year by Mr. George Guyon; and an adult male was contributed by Mr. R. H. Meade.

THERIDION DENTICULATUM. Pl. XIII, fig. 118.

Theridion denticulatum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 305.

— — Blackw., Linn. Trans., vol. xix, p. 124.

— — Blackw., Annals and Mag. of Nat. History, second series, vol. viii, p. 443.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th;

breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{5}{34}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The cephalo-thorax is short, oval, convex, glossy, with slight furrows on the sides converging towards an indentation in the medial line; the falces are conical and vertical; the maxillæ are greatly inclined towards the lip, which is triangular; and the sternum is heart-shaped. These parts are of a dark-brown colour; the falces and the inner surface of the maxillæ are the palest, and the former have an obscure, dark, longitudinal streak in front, and another on the outer side, near the base. The legs are moderately long and slender, provided with hairs and erect spines, and of a pale, yellowish-brown colour, with dark-brown annuli; the first pair is much the longest, the fourth pair is rather longer than the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The four intermediate eyes form a square, the two anterior ones, which are the darkest and rather the largest of the eight, being seated on a protuberance; those constituting each lateral pair are placed obliquely on a small tubercle and are contiguous. The abdomen is subglobose, thinly covered with hairs, and projects over the base of the cephalo-thorax; the upper part is of a dull-brown colour, with a strongly dentated band of a yellowish-white hue, sometimes intermixed with reddish-brown, extending along the middle; this band has a narrow border, of a brownish-black tint, from which rows of spots of the same hue pass obliquely on the sides, which are of a pale-brown colour, thickly spotted with yellowish-white; the under part has a brownish-black tint, a spot near the spinners and a smaller one on the outer side of each branchial operculum being yellowish; the spinners have a pale-brown hue, and the colour of the branchial opercula is dull, yellowish-brown. Lighter and darker coloured varieties of this species are not uncommon.

The male is smaller than the female, and its abdomen, which is darker coloured, has a prominent, transverse fold near the middle of the under part. The colour of its palpi is yellowish-brown, with the exception of the digital joint, which has a dark-brown tint; the cubital and radial joints are short, the latter being produced at the extremity, on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, not very complex in structure, and of a reddish-brown colour. The convex sides of the digital joints are directed towards each other.

Branches of trees and shrubs trained against buildings, and crevices in rocks and walls, are the situations usually occupied by this species. The female, in the month of June or July, attaches to objects near her retreat a globular cocoon of greenish-brown silk, of a very loose texture, measuring one ninth of an inch in diameter, in which she deposits from thirty to sixty spherical eggs, of a brown colour, not agglutinated together.

THERIDION SIMILE. Pl. XIV, fig. 119.

Theridion simile, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 314.

Theridium — Koch, Die Arachn., Band iii, p. 62, tab. 94, fig. 215.

— — Koch, Die Arachn., Band viii, p. 79, tab. 275, fig. 649.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{1}{3}$ th; length of a leg of the third pair, $\frac{1}{16}$ th.

The cephalo-thorax is small, oval, convex, glossy, with furrows on the sides converging towards an indentation in the medial line; the falces are conical and vertical; the maxillæ are obliquely truncated at the extremity, on the outer side, and inclined towards the lip, which is semicircular, but somewhat pointed at the apex; and the sternum is heart-shaped, with small eminences on the sides, opposite to the legs. These parts are of a red-brown colour, the middle and margins of the cephalo-thorax, the sides of the sternum, and the lip, being much the darkest. The eyes are disposed on the anterior part of the cephalo-thorax in two transverse rows; the four intermediate ones form a square, those of the anterior pair, which are seated on a protuberance, being the largest and darkest of the eight; the eyes of each lateral pair are placed obliquely on a small tubercle, and are contiguous. The legs are moderately long, slender, provided with hairs, and of a brownish-yellow hue, with red-brown annuli, particularly at the articulation of the joints; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, but are without red-brown annuli, with the exception of one faint annulus at the extremity of the radial joint, and the digital joint has a small, curved, pectinated claw at its termination, which has a brown hue. The abdomen is subglobular, somewhat pointed at the spinners, thinly clothed with hairs, and projects over the base of the cephalo-thorax; it is of a yellowish-white colour, minutely freckled with brown; a whitish, dentated band, bounded on each side by a dark-brown band, whose anterior extremity is the broadest, extends along the middle of the upper part, and is enlarged in the anterior region in a triangular form; this band comprises a narrow, longitudinal, brown band, whose continuity is usually interrupted by the base of the triangle; a greatly curved line, of a dark-brown colour, extends from the exterior margin of each branchial operculum to a patch of the same hue immediately below the spinners; the orifice of the sexual organs, which is nearly circular, has a reddish-brown colour, and that of the branchial opercula is red-brown.

The male bears a strong resemblance to the female, but it is smaller, and darker coloured. Its palpi are short; the radial is smaller than the cubital joint, and is somewhat produced at the extremity, on the under side; the digital joint has a brownish hue; it is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, not very complex in structure, with a black process enveloped in membrane at their extremity, which is slightly curved outwards, and extends beyond the end of the joint;

their colour is brownish-yellow, mingled with red-brown. The convex sides of the digital joints are directed towards each other. On the under part of the abdomen there is a very dark-brown, prominent, transverse fold.

In the summer of 1860 the Rev. O. P. Cambridge took adult and immature males and females of this species at Hursley, near Winchester, and at Bloxworth, in Dorsetshire.

THERIDION VARIANS. Pl. XIV, fig. 120.

Theridion varians, Hahn, Die Arachn., Band i, p. 93, tab. 22, figs. 71, 72.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 314.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 443.

Theridium — Koch, Die Arachn., Band xii, p. 134, tab. 428, figs. 1056—1058.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is short, oval, convex, glossy, and has a large indentation in the medial line; it is of a yellowish-white colour, with a broad, black band extending along the middle, fine, black, lateral margins, and a spot of the same hue on the frontal margin. The falces, which are conical and vertical, have a yellowish tint, with a black spot at the base, in front. The maxillæ are convex at the base, and inclined towards the lip, which is somewhat triangular. The colour of these parts is yellowish, each having a black spot at the base. The sternum is heart-shaped, of a pale-yellow hue, and is broadly bordered with black, except at the anterior part. The legs are long, slender, and diaphanous, with black annuli; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi, which are short, resemble the legs in colour, and have a curved, pectinated claw at their extremity. The four intermediate eyes form a square, the two anterior ones, which are seated on a protuberance, being the darkest and rather the largest of the eight; those constituting each lateral pair are contiguous, and are placed on a small tubercle. The abdomen is subglobose, glossy, thinly clothed with hairs, and projects over the base of the cephalo-thorax; it is of a dark-brown colour on the upper part, a broad, strongly dentated band, which tapers to the spinners, extending along the middle; this band has a reddish-brown tint, except at the extremities and margins, which are yellowish, and it comprises some irregular black lines; at the anterior extremity there is a transverse, curved, black line, whose convexity is directed upwards; the sides and under part are of a dull, yellowish-brown colour, mottled with numerous minute, irregular, yellowish spots, the superior margin of the former being strongly dentated; a brownish-black, oval spot occurs on each side of the upper part of the sexual organs, and a larger one of the same hue is situated between those organs and the spinners; the sexual organs have a longitudinal,

red-brown septum in the middle, and their posterior margin is triangular, prominent, and black; the colour of the branchial opercula is pale-yellow. This spider, as its name imports, varies greatly in colour. The female becomes paler after she has deposited her eggs, and the brownish-black spot between the sexual organs and the spinners is then frequently almost obliterated.

The male is smaller and somewhat darker coloured than the female, and its falces are gibbous at the base, in front. Its abdomen is oviform, convex above, and has a very prominent, transverse fold near the middle of the under part. The colour of its palpi is yellowish-brown, with the exception of the radial and digital joints, which have a dark-brown hue; the radial joint is smaller than the cubital, and is produced on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complicated in structure, with a strong, black, prominent, crescent-shaped process towards the inner side, a fine spine near the middle, which is curved downwards, and a short, pointed process at the extremity extending a little beyond the end of the joint; they are of a red-brown colour. The convex sides of the digital joints are directed towards each other.

Theridion varians occurs in localities similar to those frequented by *Theridion denticulatum*, and is a common British spider. It pairs in June, and in July the female constructs several globular cocoons, of dull, white silk, of a very loose texture, the largest of which measures about one seventh of an inch in diameter; they are attached to objects situated near the upper part of the snare, and contain, according to their size, from twenty to sixty spherical eggs, of a yellowish-white colour, not adherent among themselves. Withered leaves, dried moss, and particles of indurated earth are generally disposed about the cocoons.

On the 14th of June, 1852, an adult female of this species was captured at Oakland, which had only six eyes; the two posterior intermediate ones were entirely wanting, and the posterior eye of each lateral pair had not half of the usual size. An inexperienced observer might be induced by the symmetrical arrangement of the organs of vision in this individual, not only to give it a place in the tribe *Senoculina*, but also to propose a new genus for its reception.

Of the three figures of *Theridion varians*, 1056, 1057, and 1058, given by M. Koch, in the twelfth volume of 'Die Arachniden,' M. Walckenaer has placed the first and second among the synonyma of *Theridion denticulatum*, and the third among those of *Theridion tinctum*; he has also referred to fig. 1056 as a portrait of a female, whereas it most unequivocally represents a male ('Hist. Nat. des Insect. Apt.,' t. iv, pp. 489, 490). With due deference to the opinion of so accomplished an arachnologist as M. Walckenaer, there does not appear to be any sufficient reason to question the accuracy of the view taken by M. Koch.

THERIDION TINCTUM. Pl. XIV, fig. 121.

Theridion tinctum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 308.

Theridium irroratum, Koch, Die Arachn., Band iv, p. 120, tab. 141, fig. 327.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{32}$ th; breadth of the abdomen, $\frac{1}{18}$ th; length of an anterior leg, $\frac{3}{10}$ ths; length of a leg of the third pair, $\frac{3}{20}$ ths.

The legs are long, slender, provided with hairs, and fine, erect spines, and are of a yellowish-white colour, with black spots and annuli; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected at its base. The palpi, which are short, resemble the legs in colour, and have a small, curved, pectinated claw at their extremity. The cephalo-thorax is slightly compressed before, rounded on the sides, convex, glossy, and has an indentation in the medial line; it is of a yellowish-white hue, with several black spots on the lateral margins, a transverse line of the same hue on the frontal margin, which is broadest in the middle, and a triangular, soot-coloured mark, with pale, brownish-yellow intermixed, whose base comprises the posterior row of eyes, and whose vertex terminates at the medial indentation. The eyes, which are seated on black spots, are disposed in two transverse rows on the anterior part of the cephalo-thorax; the four intermediate ones form a square, the two anterior ones, which are placed on a protuberance, being the largest and darkest of the eight; the eyes of each lateral pair are seated obliquely on a tubercle, and are near to each other, but not in contact. The falces are conical, vertical, and armed with a few minute teeth on the inner surface; they are of a pale, brownish-yellow hue, tinged with red at the extremity, and have a short, black, longitudinal streak at their base, on the inner side. The maxillæ are obliquely truncated at the extremity, on the outer side, and are inclined towards the lip, which is triangular, but rounded at the apex. The former of these organs have a brownish-yellow hue, and that of the latter is dark-brown, being palest at the apex. The sternum is heart-shaped, and of a yellowish-white colour, with black spots on the sides, and a streak of the same hue extending from the posterior extremity, along the middle, nearly its entire length. The abdomen is subglobose, thinly clothed with hairs, projects over the base of the cephalo-thorax, and is of a pale-yellow colour; a black band, curved round its anterior extremity, extends to the sides, and projects from its middle an angular point, directed upwards; on each side of the medial line of the upper part there is a row of black spots, confluent or nearly so, which extends to the spinners; the two anterior spots are much the largest, and when united at their base, which is usually the case, describe two contiguous triangles, whose vertices are directed forwards; in the dentated, pale-yellowish space comprised between the two rows of black spots there are several angular, soot-coloured lines, whose vertices are directed forwards; and a few oblique streaks of the same hue pass from the spots to the sides; a spot situated before the sexual organs, a triangular one behind them, on each side of which there is a short, oblique streak, and two minute ones near the base of the inferior spinners have a black hue; the sexual organs, which are moderately

developed, are of a red-brown colour, and that of the branchial opercula is pale, brownish-yellow.

The male is slenderer, darker coloured, and has much longer legs than the female. The cubital and radial joints of its palpi are short, and the latter is produced at its extremity, on the outer side, where there are a few long hairs; the digital joint is oval, and is tinged with brown; it is convex and hairy externally, concave within, comprising the palpal organs, which are neither highly developed nor very complex in structure; they have a short, dark-brown process at their extremity, which is in contact with some prominent, semi-transparent membrane on the outer side, and their colour is red-brown.

Numerous specimens of *Theridion tinctum* were taken by the Rev. O. P. Cambridge, in the summer of 1860, in uninhabited rooms in Dorsetshire. This species, though very closely connected with *Theridion varians*, *Theridion denticulatum*, and *Theridion simile*, by relations of affinity, yet may be distinguished from them by the greater length of its legs, and particularly by those of the second pair surpassing those of the posterior pair, a character which approximates it to the spiders of the genus *Linyphia*.

THERIDION PULCHELLUM. Pl. XIV, fig. 122.

Theridion pulchellum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 311.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 444.

— *formosum*, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. x, p. 101.

Theridium vittatum, Koch, Die Arachn., Band iii, p. 65, tab. 94, fig. 217.

— — Koch, Die Arachn., Band iv, p. 118, tab. 141, fig. 326.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{14}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{5}{34}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is oval, convex, glossy, and has a large indentation in the medial line; it is of a yellowish-brown colour, tinged with green; a broad, black band extends along the middle, and a fine line of the same hue occurs on the margins. The falces are conical, vertical, and armed with a few teeth on the inner surface, near their extremity; the maxillæ are inclined towards the lip, which is nearly semicircular. These parts are of a reddish-brown hue, the lip being black at the base. The sternum is heart-shaped, with small prominences on the sides, opposite to the legs; it has a yellowish-brown tint in the middle, and broad, black, lateral margins, which meet at its posterior extremity. The legs are long, provided with hairs, and of a yellowish-brown colour, with reddish-brown annuli; the first pair is the longest, the fourth pair rather surpasses the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The eyes are nearly equal in

size; the four intermediate ones form a square, the two anterior ones being the darkest and rather the largest of the eight; those constituting each lateral pair are seated on a small tubercle, and are contiguous. The abdomen is sparingly clothed with hairs, very convex above, and projects greatly over the base of the cephalo-thorax; along the middle of the upper part there extends a broad, dark, red-brown band, having sinuous margins, which is bordered anteriorly with pale-yellow; the sides have a lighter shade of red-brown, and the colour of the under part is yellow, tinged with green, a broad, longitudinal, dark, red-brown band occupying the medial line; a small, pale, curved, prominent process is connected with the sexual organs; and the branchial opercula have a yellow tint.

In colour the sexes closely resemble each other; but the male is rather smaller and darker than the female, and the relative length of its legs is different, the second pair being longer than the fourth. The cubital and radial joints of the palpi are short; the latter, which is the stronger, projects an acute apophysis from its extremity, on the under side, and has a protuberance on the outer side, with which several long bristles are connected; the digital joint is of an oblong oval form, convex and hairy externally, concave within, comprising the palpal organs; these organs are moderately developed, complicated in structure, having an obtuse, projecting process in contact with the protuberance on the outer side of the radial joint, and two fine spines at their extremity, one of which is curved into a circular form; their colour is dark, reddish-brown. The digital joints of the palpi have their convex sides directed towards each other.

In summer and autumn this species may be found on rails and gates about Oakland. The plan of its snare is similar to that on which the snares of other *Theridia* are constructed. In June the female deposits about twenty-nine spherical eggs of a yellowish-white colour, not adherent among themselves, in a globular cocoon of white silk, of a fine but compact texture, measuring one eighth of an inch in diameter. Near the cocoon, which is sometimes attached to the under side of a leaf by fine lines of silk, she takes her station, and on the approach of danger endeavours to secure her treasure by seizing it with her falces, palpi, and feet.

THERIDION CAROLINUM. Pl. XIV, fig. 123.

Theridion Carolinum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 315.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 444.

— *dorsiger*, Hahn, Die Arachn., Band i, p. 82, tab. 20, fig. 61 (misnumbered 60 in the plate).

Linyphia bimaculata, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 10.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{34}$ th, breadth, $\frac{1}{34}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The eyes are seated on a small eminence; the four intermediate ones form a square, the

two anterior ones, which are placed on a protuberance, being the smallest, and the two posterior ones the largest of the eight; those constituting each lateral pair are seated on a small tubercle, and are contiguous. The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, and has an indentation in the medial line; the falces are conical and vertical; the lip is semicircular, and the sternum is heart-shaped, with small prominences on the sides, opposite to the legs. The colour of these parts is red-brown, with the exception of the extremity of the lip, and an irregular spot on each side of the cephalo-thorax, which have a yellowish-white tint. The maxillæ are enlarged at the base, where the palpi are inserted, inclined towards the lip, and of a yellowish-white hue, with an irregular, red-brown spot on the outer side. The legs are long, slender, provided with hairs and a few erect spines, and have a yellowish-white tint; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is subglobose, thinly covered with hairs, and projects over the base of the cephalo-thorax; it is of a red-brown colour, with a pale-yellow band in the medial line of the upper part, which is broadest at the anterior extremity, and tapers to the spinners; the sexual organs are prominent, of a red-brown hue, and have an obtuse, black process in connexion with them, which projects forwards towards the sternum; the colour of the branchial opercula is yellowish-brown.

The male, according to the description given of it by M. Koch in Herrich Schæffer's 'Deutschlands Insecten,' Heft 127, is smaller than the female, and its abdomen, which is more cylindrical, is curved downwards at the posterior extremity, and almost black; the yellow, longitudinal band, also, on the upper part is much smaller, and bisected transversely. Its legs are longer than those of the other sex, and have somewhat of a reddish-yellow hue; and the palpi are long, and of a dark-brown colour, the digital joint excepted, which is black, with a yellowish, curved extremity; the colour of the palpal organs (der Knoten) is chesnut-brown.

This rare spider has been taken among grass near woods at Oakland, and has also been captured in Essex by Mr. R. H. Meade. In June the female fabricates a globular cocoon of white silk, of a slight texture, measuring one tenth of an inch in diameter, in which she deposits about fifty spherical eggs, of a pale, yellowish-white colour, not agglutinated together. The cocoon is attached to the spinners by short silken lines, and is transported with her wherever she goes, in the manner of the *Lycosæ*.

THERIDION VERSUTUM. Pl. XIV, fig. 124.

Theridion versutum, Blackw., Annals and Mag. of Nat. Hist., vol. xviii, p. 302.

— — — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 444.

Length of the male, $\frac{11}{32}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{8}$ th, breadth, $\frac{1}{11}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{3}{8}$ ths; length of a leg of the third pair, $\frac{7}{30}$ ths.

The four intermediate eyes form a square, the two anterior ones, which are the darkest and rather the smallest of the eight, being seated on a protuberance; those constituting each lateral pair are placed on a small tubercle, and are contiguous. The cephalo-thorax is convex, glossy, slightly compressed before, rounded on the sides, and has an indentation in the medial line; the falces are powerful, conical, and vertical. Both parts are of a brown colour, faintly tinged with red. The maxillæ are convex at the base, and greatly inclined towards the lip, which is semicircular, and the sternum is heart-shaped. These parts are of a brown hue, tinged with yellow, the extremities of the maxillæ being yellowish-white. The legs are long, slender, provided with hairs, and of a pale, yellowish-brown colour; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi have a pale, yellowish-brown tint; the radial joint is larger than the cubital, and is produced on the outer side; this elongation is rounded at the extremity, and applies very closely to the digital joint, which is oval, convex and hairy externally, concave within, comprising the palpal organs; they are moderately developed, complicated in structure, with a prominent process on the inner side, and a strong, curved spine at the extremity, whose slender point is in contact with a delicate, white membrane, and are of a reddish-brown colour. The abdomen is oviform, sparingly covered with hairs, convex above, projecting over the base of the cephalo-thorax; the upper part is black, with a large, white, crescent-shaped mark at its anterior extremity, and three longitudinal rows of white spots, one on each side, and the other extending along the middle, which diminish in size as they approach the spinners; the under part has a yellowish tint, freckled with black; and the colour of the branchial opercula is pale-yellow.

The specimen from which the foregoing description was made was captured in the neighbourhood of Winchester, in July, 1846, by James Franklin Preston, Esq., and was comprised in a collection of *Araneidea*, made by that gentleman in Hampshire and the Isle of Wight.

THERIDION PALLENS. Pl. XIV, fig. 125.

Theridion pallens, Blackw., Research. in Zool., p. 357.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 445.

— *minimum*, Wider, Museum Senckenb., Band i, p. 249, taf. 17, fig. 2.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 320.

Epëira nubila, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. x, p. 101.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{18}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{15}$ th; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{18}$ th.

The cephalo-thorax is convex, glossy, slightly compressed before, rounded on the sides, and has an indentation in the medial line; the falces are small, conical, and vertical; the

maxillæ are inclined towards the lip, which is somewhat triangular; the sternum is heart-shaped, and the legs and palpi are provided with hairs and fine spines. These parts are of a yellowish-white colour, the legs and palpi being the palest; the sternum has a tinge of green, and a broad, dark-brown band extends along the middle of the cephalo-thorax. The first pair of legs is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The four intermediate eyes form a square, the two anterior ones being seated on a protuberance; those constituting each lateral pair are placed obliquely on a small tubercle, and are contiguous. The abdomen is subglobose, sparingly clothed with short hairs, and projects greatly over the base of the cephalo-thorax; it is of a pale-yellow colour, mottled with spots of a lighter hue; there are several dark-brown spots at the anterior extremity of the upper part, two transverse, confluent, dark-brown streaks on each side, near the middle, the anterior one of which is the longer and somewhat curved, and an obscure, longitudinal streak of the same hue occurs immediately above the spinners; on the under part two oblique bands, of a dull-greenish colour, converge towards the sexual organs, the margins of which are black; and the branchial opercula have a pale-yellow tint. The dark-brown marks on the upper part of the abdomen are subject to some modification of form in different individuals, and almost disappear after the female has deposited her eggs.

The male differs from the female in various particulars; it is smaller, the second pair of legs is longer than the fourth, and the colour of these organs, with that of the sternum and cephalo-thorax, is yellowish-brown, a broad, brownish-black band, whose margins are the darkest, extending along the middle of the last part. The falces, maxillæ, and lip have a pale, reddish-brown tint. The palpi resemble the legs in colour, with the exception of the digital joint, which has a dark-brown hue; the cubital and radial joints are short and strong, the latter being most prominent on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, and have a strong spine on the outer side, which is curved into a circular form, and terminates in an obtuse projection at their extremity; they are of a dark, red-brown colour. The convex sides of the digital joints are directed towards each other. The abdomen is somewhat depressed, moderately convex above, and projects over the base of the cephalo-thorax; the upper part has a brownish-black tint; the colour of the sides and under part is pale-yellow, the former being almost white at their anterior extremity; and each branchial operculum is surrounded by an irregular, black line.

Bushes and coarse herbage growing in the vicinity of woods in Lancashire and Denbighshire are frequented by this minute species of *Theridion*. It pairs in May, and in June the female deposits about twenty spherical eggs, of a pale-yellowish colour, in a pyriform cocoon, having several conical prominences disposed in a circle round its greatest circumference; it is composed of fine, compact, white silk, and measures three twentieths of an inch in length, and one tenth in diameter.

The dissimilarity of the sexes in structure and colour has occasioned the male to be described in the 'London and Edinburgh Philosophical Magazine' as an *Epëira*, under the specific name of *nubila*; a careful investigation of its habits and economy, subsequently made, has led to the correction of this error.

Mr. R. Templeton has found *Theridion pallens* in Ireland.

THERIDION STICTUM. Pl. XIV, fig. 126.

Theridion stictum, Cambridge, Annals and Mag. of Nat. Hist., third series, vol. vii, p. 432.

Length of the female, $\frac{1}{9}$ th of an inch ; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th ; breadth of the abdomen, $\frac{1}{12}$ th ; length of an anterior leg, $\frac{3}{20}$ ths ; length of a leg of the third pair, $\frac{1}{10}$ th.

The cephalo-thorax is oval, convex, glossy, prominent in the cephalic region, and strongly marked with numerous punctures ; the falces are small, conical, and vertical ; the maxillæ are obliquely truncated at the extremity, on the outer side, and are greatly inclined towards the lip, which is semicircular ; the sternum is broad, heart-shaped, glossy, and strongly punctated. These parts are of a very dark-brown colour, approaching to black. The legs are short, slender, provided with hairs, and have a red hue ; the first pair is the longest, then the fourth, and the third pair is the shortest ; each tarsus is terminated by three claws ; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a minute, curved claw at their extremity. The eyes are disposed on the anterior part of the cephalo-thorax in two transverse rows ; the four intermediate ones form a square, those of the anterior pair, which are seated on a protuberance, being rather the largest and darkest of the eight ; the eyes of each lateral pair are placed obliquely on a tubercle, and are contiguous. The abdomen is short, broad, thinly clothed with hairs, glossy, very convex above, and projects greatly over the base of the cephalo-thorax ; it is of a yellow-brown colour, the medial line of the upper part and a fine line curved round its anterior extremity being somewhat paler ; the sides and a conspicuous spot on each side of the upper part of the anterior extremity have a dark-brown hue, and a broad, dark-brown band, comprising the spinners, which have a yellow-brown hue, extends along the middle of the under part.

Immature females of this *Theridion* were captured by the Rev. O. P. Cambridge, on Bloxworth Heath, in the autumn of 1860.

THERIDION INORNATUM. Pl. XIV, fig. 127.

Theridion inornatum, Cambridge, Annals and Mag. of Nat. Hist., third series, vol. vii, p. 433.

Length of the female, $\frac{1}{12}$ th of an inch ; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{30}$ th ; breadth of the abdomen, $\frac{1}{16}$ th ; length of an anterior leg, $\frac{1}{8}$ th ; length of a leg of the third pair, $\frac{1}{12}$ th.

The legs are moderately robust, and provided with hairs ; the first pair is the longest,

then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base; the palpi are short, and have a small, curved, pectinated claw at their extremity; the cephalo-thorax is small, oval, convex, glossy, very prominent in the cephalic region, and has a slight indentation in the medial line; the falces are short and vertical; and the maxillæ are somewhat pointed at the extremity and inclined towards the lip. These parts are of a yellow-red colour, with the exception of the tibiæ of the first and second pairs of legs, the extremity of the tibiæ of the fourth pair, and the narrow, lateral margins of the cephalo-thorax, which have a dark-brown hue. The lip is semicircular, and the sternum is convex and heart-shaped. These parts are of a brown colour, tinged with red. The eyes are disposed on the anterior prominence of the cephalo-thorax in two transverse rows; the four intermediate ones form a square, those of the anterior pair, which are seated on a strong protuberance, being the largest and darkest of the eight; the eyes of each lateral pair are placed obliquely on a small tubercle, and are contiguous. The abdomen is oviform, glossy, convex above, projecting over the base of the cephalo-thorax, and is of a brown-black colour; the sexual organs have a small, circular, reddish-brown orifice; the branchial opercula are of a red-brown hue; and that of the spinners is pale, yellow-brown. Some individuals have the abdomen of a brown colour, slightly tinged with yellow.

The sexes are similar in colour, but the male is smaller than the female, and the anterior part of its cephalo-thorax is more prominent. The cubital and radial joints of its palpi are short, and the latter is somewhat produced at its extremity, towards the inner side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed and prominent; these organs and the joint with which they are connected are of a red-brown colour.

Adult and immature males and females of this species were captured in the autumn of 1859 and the summer of 1860, in Portland, by the Rev. O. P. Cambridge.

THERIDION FUSCUM.

Theridion fuscum, Blackw., Linn. Trans., vol. xviii, p. 626.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 445.

Length of the female, $\frac{1}{16}$ th of an inch; length of the cephalo-thorax, $\frac{1}{32}$ nd, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{16}$ th.

This spider is of a dark, reddish-brown colour, the abdomen being marked with obscure spots of a deeper shade. The cephalo-thorax is glossy, compressed before, rounded on the sides, which are marked with furrows, very convex immediately behind the eyes, depressed in the posterior region, with a large indentation in the medial line. The four intermediate eyes form a trapezoid, whose anterior side is much the shortest, and those of each lateral pair are contiguous, and placed obliquely; the posterior eyes of the trapezoid are the largest, and the

anterior ones much the smallest of the eight. The falces are small, conical, armed with a few teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped. The maxillæ are obliquely truncated at the extremity, on the outer side, and inclined towards the lip, which is semicircular. The legs are robust, and provided with hairs and a few fine spines; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi have a curved claw at their extremity. The abdomen is subglobose, somewhat depressed, thinly clothed with hairs, glossy, and projects greatly over the base of the cephalo-thorax.

M. Walckenaer appears to regard *Theridion fuscum* as identical with *Argus formivorus* ('Hist. Nat. des Insect. Apt.,' t. iv, p. 502), from which it differs in size, structure and colour, presenting all the essential characters of a *Theridion*.

Females of this species may be found towards the close of the year on rails and under stones, in pastures near Llanrwst.

THERIDION AURATUM. Pl. XIV, fig. 128.

Sigaloëssa aurata, Templeton, MS. History of Irish Arachnida.

Length of an immature male, $\frac{1}{8}$ th of an inch.

The tumid but imperfectly developed digital joints of the palpi of the specimen here described denote that it is a male which had not arrived at maturity. The cephalo-thorax is obcordate, much carinated anteriorly, glossy, and of a chesnut-black colour; underneath it is of a brownish-black hue. The abdomen is globular or ovate, and its colour is golden-yellow; it is studded with short, stiff, dark-brown hairs, which are accumulated on the sides and in the medial line of the upper part, giving in the latter the appearance of a broad, longitudinal, brown fascia; underneath, a dark-brown fascia extends from the branchial opercula to the spinners. The legs are taper, hairy, and, with the palpi and falces, of a chesnut-black colour. A much paler variety of this species may sometimes be observed.

A few specimens of *Theridion auratum* have been taken at Cranmore.

THERIDION HÆMATOSTIGMA. Pl. XIV, fig. 129.

Sinamorus hæmatostigma, Templeton, MS. History of Irish Arachnida.

The female of this small *Theridion* has the cephalo-thorax oval, and of a pale-brown colour, edged by a faint, dark line; in the middle there is a line which is double anteriorly, but single and much darker at the central thoracic point, whence dark lines extend to the origins of the legs; underneath it is glossy, and of a reddish or orange hue. The abdomen is ovate, hairy, and of a dark-gray colour, approaching to black, on the upper part, especially

at the base and apex; a broad, pale or white, central fascia extends its entire length, and sends off from each side of its posterior half four or five abbreviated, transverse fasciæ; on each side of the medial line, and included in the longitudinal fascia there is an impressed, reddish dot, more or less strongly marked, but invariably present, and situated about one third of the length of the abdomen from its base; the under part is of a grayish colour in the centre, edged by a double black line, with a white interval. The legs are moderately long, very hairy, and of a pale-brown or greenish hue. Some varieties have the abdomen much darker, and the cephalo-thorax redder coloured.

This species is common in the dark walks at Cranmore.

THERIDION ALBENS. Pl. XIV, fig. 130.

Theridion albens, Blackw., Linn. Trans., vol. xviii, p. 627.

— — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 492.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 445.

Length of the female, $\frac{1}{16}$ th of an inch; length of the cephalo-thorax, $\frac{1}{32}$ nd, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{32}$ nd; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{16}$ th.

The eyes are seated on black spots on the anterior part of the cephalo-thorax; the four intermediate ones form a square, and those constituting each lateral pair are contiguous, and placed obliquely on a minute tubercle. The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, and has a slight indentation in the medial line. The falces are small, conical, and vertical. The maxillæ are slender, and inclined towards the lip, which is triangular and pointed at the apex. The sternum is heart-shaped. The legs are provided with hairs; the first pair is the longest, the fourth pair rather surpasses the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi have a curved claw at their extremity. The abdomen is thinly clothed with hairs, very convex above, and projects greatly over the base of the cephalo-thorax. The general colour of this spider is whitish, but a small, oblique oval, formed by a fine, black line, occurs near the middle of the upper part of the abdomen, on each side of the medial line; the sexual organs also are black, and an obscure band of a darkish hue extends along the middle of the cephalo-thorax.

A female of this minute spider was discovered in July, 1837, among strawberry plants, in the garden at Hendre House, near Llanrwst.

THERIDION GUTTATUM. Pl. XIV, fig. 131.

Theridion guttatum, Wider, Museum Senckenb., Band i, p. 241, taf. 16, fig. 7.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 318.

Theridium — Koch, Die Arachn., Band viii, p. 81, tab. 275, figs. 651, 652.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The abdomen is subglobular, somewhat pointed at the spinners, glossy, thinly clothed with hairs, and projects over the base of the cephalo-thorax; it is of a brown-black colour, with a row of five pale-yellow spots in the medial line of the upper part, a row of three spots of the same hue on each side, and the colour of the branchial opercula and spinners is brown. The cephalo-thorax, sternum, and abdomen, are thickly marked with conspicuous punctures. The cephalo-thorax is oval, convex, glossy, and somewhat prominent in the cephalic region; the falces are short, conical, and vertical; the maxillæ are pointed at the extremity, and greatly inclined towards the lip, which is semicircular; and the sternum is broad, convex, and heart-shaped. These parts are of a very dark-brown colour. The eyes are disposed on the anterior part of the cephalo-thorax in two transverse rows; the four intermediate ones nearly form a square, those of the posterior pair being rather wider apart than those of the anterior pair, which are seated on a protuberance, and are the darkest of the eight; the eyes of each lateral pair are placed obliquely on a small tubercle, are rather the largest of the eight, and are contiguous. The legs are slender, provided with hairs, and of a yellowish-red colour, with dark-brown annuli, the annulus at the extremity of the tibia being the broadest and darkest; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a small, curved, slightly pectinated claw at their extremity.

The sexes are similar in colour, but the anterior part of the cephalo-thorax of the male is more prominent, its legs are proportionally longer, and its abdomen is smaller, than those of the female. The cubital, radial, and digital joints of its palpi have a brown hue; the cubital joint is enlarged at its extremity; the radial joint is produced towards the outer side, and overlaps the base of the digital joint, which is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complex in structure, with a prominent, obtuse, light-coloured process near their extremity, on the inner side, at the base of which, towards the outer side, there are two minute, curved, black spines, and their colour is reddish-brown.

The Rev. O. P. Cambridge found adult and immature specimens of *Theridion guttatum* at Hursley, near Winchester, and at Bloxworth, in the summer of 1860.

THERIDION FLAVO-MACULATUM. Pl. XIV, fig. 132.

Theridion flavo-maculatum, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 118.

Micryphantes flavo-maculatus, Koch, Die Arachn., Band iii, p. 67, tab. 95, fig. 220.

Length of the male, $\frac{1}{7}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{17}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of a posterior leg, $\frac{1}{5}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs are short, moderately hairy, and of a light, reddish-brown colour, with the exception of the tarsi, which have a dark-brown tint; the fourth pair is the longest, the first pair slightly surpasses the second, and the third pair is rather the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The cephalo-thorax has a short oval form; it is convex, glossy, prominent in front, and has an indentation in the medial line; the falces are small, conical, and vertical; the maxillæ are gibbous at the base, and greatly inclined towards the lip, which is short and semicircular; the sternum is heart-shaped and glossy. These parts are of a reddish-brown colour, the margins of the cephalo-thorax and sternum being blackish. The four intermediate eyes form a square nearly, the two anterior ones, which are rather wider apart than the posterior ones, and the largest of the eight, being seated on a brownish-black protuberance; the eyes constituting each lateral pair are placed obliquely on a small tubercle, and are almost contiguous. The palpi have a browner tint than the legs, and the colour of the radial and digital joints is dark-brown; the radial joint is short, broad, and projects upwards from its base, on the outer side, a pointed process which is in close contact with the extremity of the cubital joint; the digital joint is somewhat oval, but slightly curved and pointed at the end; it is convex and hairy externally, concave within, and comprises the palpal organs, which are highly developed, with three short processes at their extremity, and are of a dark, reddish-brown colour. The abdomen is oviform, glossy, sparingly supplied with hairs, convex above, and projects over the base of the cephalo-thorax; it is of a brownish-black hue, marked with pale, reddish-brown spots and streaks on the upper part, those in the medial line, and on each side of it, being the most conspicuous; the colour of the branchial opercula is brownish-yellow, and a line of the same hue extends from them nearly to the spinners.

An adult male *Theridion flavo-maculatum*, which hitherto appears to have escaped the observation of arachnologists, was found running on a foot-path in a wood near Oakland, in May, 1852, and from it the foregoing description was made. The female of this species, previously described and figured by M. Koch under the name of *Micryphantes flavo-maculatus*, judging from the smallness of its size, was probably an immature individual; its colours, though not so intense, bear a close resemblance to those of the male in their distribution. A minute examination of the essential characters of this spider has led to its removal from the genus *Micryphantes* to that of *Theridion*.

In confirmation of the opinion that the female *Theridion flavo-maculatum* described by

M. Koch was immature, the measurement of an adult female, discovered under a stone in a wood at Oakland, on the 14th of August, 1855, is subjoined. Length, $\frac{3}{20}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{18}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of a posterior leg, $\frac{3}{16}$ ths; length of a leg of the third pair, $\frac{3}{20}$ ths. The length of M. Koch's specimen was only one line.

THERIDION ANGULATUM. Pl. XIV, fig. 133.

Theridion angulatum, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 483.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 445.

Length of the female, $\frac{1}{7}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{22}$ nd; breadth of the abdomen, $\frac{1}{14}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The abdomen, which is deeply notched in front, and projects over the base of the cephalo-thorax, has an angular appearance, occasioned by two bold, lateral prominences, situated on its upper part, nearer to the posterior than to the anterior extremity; the space before the lateral prominences is of a deep, red-brown colour, the margins being the darkest, and on each side of the medial line there are two minute, yellowish-white spots, forming a long, narrow, quadrilateral figure; the posterior part has a pale, red-brown tint, and a transverse, yellow line connects the lateral prominences, from which two obscure, angular bands converge to the spinners; the whole of the upper part has an irregular border of yellowish-white, minutely freckled with red-brown; the sides and under part are of a dark, red-brown colour, with streaks and small spots of a lighter shade; and the branchial opercula have a yellow tint. The cephalo-thorax is convex, slightly hairy, compressed and prominent before, rounded on the sides, and has an indentation in the medial line; its colour is pale, yellowish-brown; on each side there is a longitudinal, red-brown band, another of the same hue extends along the middle, and the margins have a yellowish-white tint. The eyes are seated on black spots; the four intermediate ones nearly form a square, the two anterior ones being placed on a protuberance; those constituting each lateral pair are seated obliquely on a tubercle, and are almost contiguous. The falces are moderately strong, conical, vertical, and of a red-brown colour, with a spot of a darker hue near the base, in front. The maxillæ are enlarged where the palpi are inserted, obliquely truncated at the extremity, on the outer side, and inclined towards the lip, which is nearly semicircular, being somewhat pointed at the apex. These organs, with the palpi, which are short, and have a pectinated, curved claw at their extremity, are of a red-brown hue. The sternum, which is oblong heart-shaped, has a dark, red-brown tint. The legs are of a yellowish-brown colour, with red-brown annuli; the first pair is the longest, then the fourth, and the third pair is the shortest; the legs of the second and third pairs are shorter, as compared with those of the first and fourth pairs, than

is customary with the spiders of this genus; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its insertion.

The male is smaller and darker coloured than the female; its legs, which are slender, are longer than hers, and its abdomen is without lateral protuberances on the upper part. The humeral joint of its palpi is long; the cubital and radial joints are short, the latter being the stronger; and the digital joint, which has an oblong-oval form and red-brown hue, is convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, vascular, complicated in structure, with a black spine curved from the outer to the inner side, round their base, several curved, pointed, black processes at their extremity, extending a little beyond the end of the joint, and are of a pale, brownish-red colour.

A specimen of this remarkable species was detected in a cleft of a rail at Oakland, in April, 1835. It was a female, and, like *Tetragnatha extensa*, frequently extended the first and second pairs of legs forwards, and the fourth pair backwards, in a line with the body.

In the summer of 1860, the Rev. O. P. Cambridge took both sexes of *Theridion angulatum*, in a state of maturity, at Hursley, near Winchester. The female was much paler, as may be seen by inspecting the figure, than the one described above, which was immature, but there is no reason for doubting their specific identity. This spider has various striking characteristics in common with the *Episinus truncatus* of Walckenaer ('Hist. Nat. des Insect. Apt.,' tom. ii, p. 375, pl. 21, fig. 1 D; and tom. iv, p. 515), but there does not appear to be any necessity for removing it from the genus *Theridion*.

THERIDION VARIEGATUM. Pl. XIV, fig. 134.

Theridion variegatum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 332.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 446.

— *thoracicum*, Wider, Museum Senckenb., Band i, p. 218, taf. 14, fig. 11.

— *callens*, Blackw., Linn. Trans., vol. xviii, p. 627.

Ero variegata, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 8.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{7}$ th.

The cephalo-thorax is oval, glossy, and very convex, but it slopes abruptly in the posterior region, where there is an indentation in the medial line; a row of fine, curved bristles, which are directed forwards, extends along the middle, and its colour is pale, yellowish-brown, the lateral margins, a triangular spot in the centre, which projects a line from the middle of its base to the eyes, and has a narrow triangle at its apex, whose base terminates at the medial indentation, together with a small triangular spot immediately behind each lateral pair of eyes, being black. The eyes are seated on black spots; the four intermediate ones form a square, the two anterior ones being placed on a protuberance, and the

eyes of each lateral pair are seated on a small tubercle, and are contiguous. The falces are powerful, conical, armed with a few minute teeth on the inner surface, rather inclined towards the sternum, and of a dark-brown hue. The maxillæ have a red-brown tint, with a dark-brown mark on the outer side; they are pointed at the extremity, and encompass the lip, which is triangular, black at the base, and of a red-brown hue at the apex. The sternum is oblong heart-shaped, of a pale, red-brown colour, and has irregular, brownish-black marks on the margins. The legs are long and slender, with a row of curved spines on the anterior side of the tibial, metatarsal, and tarsal joints of the first and second pairs, those on the metatarsal joint being much the longest; both the legs and palpi have a pale, yellowish-brown tint, and are marked with numerous dark-brown annuli. The first pair of legs is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi have a curved, pectinated claw at their extremity. The abdomen is very convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with long, coarse hairs, and is variegated with black, red, and white; on the upper part, rather nearer to the anterior than to the posterior extremity, there are two tubercles, which are black in front, and of a pale, yellowish-white hue behind; the prevailing tint of the part before the tubercles is black, and of that behind them, which comprises two transverse, black streaks, connected in the middle, red; the sexual organs have a reddish-brown hue; a small process connected with their anterior margin is directed backwards, and on each side of its extremity there is a minute, glossy convexity of a deeper shade; the colour of the branchial opercula is yellow.

The sexes are similar in colour, but the male is smaller than the female. Its palpi have a yellowish hue, that of the digital joint and palpal organs being brownish; the radial joint is much longer than the cubital, and somewhat spindle-shaped; the digital joint is oval, prominent, and rather pointed at the base, broader at the extremity, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, complicated in structure, with a bold, bilobed process in contact with the prominent base of the joint, a black, filiform spine curved round their inner side, and two curved, pointed, prominent processes at their extremity.

In the fourth volume of his 'Hist. Nat. des Insect. Apt.,' p. 496, M. Walckenaer has very properly added the name *Theridion callens*, conferred on a small spider described in the 'Transactions of the Linnean Society,' and the *Ero variegata* of M. Koch to the synonyma of *Theridion variegatum*.

This species occurs among grass growing in and near woods, in the west of Denbighshire, and in Yorkshire; and Mr. J. Hardy has taken it in Berwickshire. The female fabricates a very remarkable balloon-shaped cocoon, about one eighth of an inch in diameter, which is composed of soft silk, of a loose texture and pale-brown colour, inclosed in an irregular network of coarse, dark, red-brown filaments; several of the lines composing this network unite near the smaller extremity of the cocoon, leaving intervals there through which the young pass when they quit it, and being cemented together throughout the remainder of their extent, form a slender stem, varying from one tenth to half an inch in length, by which the cocoon is attached to the surface of stones and fragments of rock, resembling in figure and position some of the minute plants belonging to the class *Cryptogamia*. The eggs are large, considering the small size of the spider, from five to eight in number, not agglutinated together, and of a brown colour.

THERIDION SIGNATUM. Pl. XIV, fig. 135.

Theridion signatum, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 333.

— — Blackw., Linn. Trans., vol. xix, p. 124.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 446.

— *quadrisignatum*, Hahn, Die Arachn., Band i, p. 80, tab. 20, fig. 60 (mis-numbered 59 in the plate).

Drassus phaleratus, Sund., Vet. Acad. Handl., 1831, p. 133.

Asagena phalerata, Sund., Consp. Arachn., pp. 19, 20.

— *serratipes*, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 13.

— — Koch, Die Arachn., Band vi, p. 98, tab. 204, figs. 502, 503.

Length of the male, $\frac{3}{16}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{12}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{11}{48}$ ths: length of a leg of the third pair, $\frac{1}{6}$ th.

The legs are robust, and have two rows of short, pointed spines on the under side of the femora and tibiae of the first and second pairs, and the femora of the third and fourth pairs; the anterior and posterior pairs are the longest, and are equal in length, and the third pair is the shortest; they have a red-brown hue, with the exception of the coxae, the whole of the tibiae, and the extremities of the femora of the first pair, and the extremities of the femora and tibiae of the other three pairs, which have a dark-brown tint; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The cephalo-thorax is large, oval, convex, rough, like shagreen, with an indentation in the medial line, and some short spines on the lateral margins; the falces are powerful, united at the base, and armed with a short, strong fang at their extremity; the maxillae are enlarged where the palpi are inserted, obliquely truncated at the extremity, on the outer side, and inclined towards the lip, which is triangular and pointed at the apex; the sternum is heart-shaped, and rough, like the cephalo-thorax. These parts are of a dark-brown colour. The four intermediate eyes form a quadrangle; the anterior pair being seated on a protuberance; those of each lateral pair are placed on a tubercle, and are contiguous. The palpi are of a dark-brown colour, with the exception of the radial and digital joints, which have a brownish-black tint; these joints are anchylosed, so that they appear to constitute one large, oval joint, which is convex and hairy externally, and concave within, comprising the palpal organs; these organs are highly developed, complicated in structure, provided with several strong, corneous processes, and are of a dark-brown colour. The abdomen is oviform, sparingly clothed with hairs, convex above, projecting a little over the base of the cephalo-thorax; it is of a brownish-black hue, with a curved, transverse line in front, an oblong spot above the spinners, and one on each side, of a bright-yellow colour; at its anterior extremity, where the cephalo-thorax is connected with it, there is a ridge produced by a fold of the integument, on which are disposed minute tubercles, each having a fine hair at its summit.

The sexes resemble each other in the design formed by the yellow marks on the abdomen, but the female is rather larger than the male, and is without strong spines on the legs.

Some difference of opinion has existed among arachnologists as to the position this spider should occupy in a systematic arrangement of the *Araneidea*; but there does not appear to be any sufficient reason for removing it from the *Theridia*, to which it seems to be most nearly allied by its organization.

In Denbighshire, this species is found among heath, but it is of rare occurrence. The radial and digital joints of the palpi are so closely connected in the male, as scarcely to present any perceptible trace of their union; in short, as they appear to be incapable of separate motion, there seems to be an impropriety in regarding them as distinct joints.

THERIDION FILIPES. Pl. XIV, fig. 136.

Theridion filipes, Blackw., London and Edinb. Phil. Mag., third series, vol. viii, p. 484.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 447.

Linyphia concolor, Wider, Museum Senckenb., Band i, p. 267, taf. 18, fig. 3.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 270.

Length of the female, $\frac{1}{5}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{5}{24}$ ths; length of a leg of the third pair, $\frac{3}{20}$ ths.

The four intermediate eyes form a trapezoid, whose anterior side is the shortest, and those constituting each lateral pair are seated on a small tubercle, and are contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones much the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are powerful, conical, armed with teeth on the inner surface, rather divergent at the extremity, and inclined towards the sternum, which is heart-shaped; the maxillæ are enlarged at the base, where the palpi are inserted, obliquely truncated at the extremity, on the outer side, and inclined towards the lip, which is semicircular and prominent at the apex; the legs and palpi are long, slender, and provided with hairs and some fine erect spines. These parts have a brown colour, the falces and maxillæ being tinged with red. The first pair of legs is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The abdomen is oviform, convex above, and projects over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brown-black colour, tinged with olive; a long, slender, cylindrical, semitransparent process, directed backwards, is connected with the sexual organs; and the colour of the branchial opercula is dark-brown. Some individuals have a series of obscure, pale, angular lines, whose vertices are directed forwards, extending along the middle of the upper part of the abdomen.

The male is rather smaller and darker coloured than the female. The cubital and radial joints of its palpi are short; the latter, which is the stronger, is prominent on the inner side and in front, several long bristles being connected with the frontal prominence; the digital joint is of a long, irregular oval form, having a projection on the outer side, and two smaller ones on the upper part, near its articulation with the radial joint; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a red-brown colour; a strong, corneous spine, enveloped in a delicate, transparent membrane, originates in the superior part of these organs, and, bending downwards, extends along their inner side a little beyond the termination of the digital joint, its extremity being curved outwards.

Theridion filipes is allied to the spiders belonging to the genus *Neriene* by the disposition and relative size of its eyes, and to those of the genus *Linyphia* by the length and delicacy of its limbs; but the structure of its maxillæ and the relative length of its legs have caused it to be classed with the *Theridia*. It occurs under stones in woods in Denbighshire, Lancashire, and Berwickshire.

An adult female of this species, captured in March, 1835, presented an anomaly in organization very unusual in this order of animals; it had a supernumerary eye situated between the two small ones constituting the anterior pair of the trapezoid.

M. Walckenaer has inadvertently placed the *Linyphia concolor* of M. Wider, which is identical with *Theridion filipes*, among the synonyma of *Argus graminicollis*, having previously described it as a distinct species under the name conferred upon it by M. Wider ('Hist. Nat. des Insect. Apt.,' t. ii, pp. 270, 351).

Genus PHOLCUS (Walck.).

Eyes seated on an anterior prominence of the cephalo-thorax; three, closely grouped on each side, form a compact triangle, and the other two, placed transversely between the triangles, are the smallest of the eight.

Maxillæ long, narrow, tapering from the dilated base to the extremity, and inclined towards the lip.

Lip large, contracted at the base, dilated in the middle, and rounded at the apex.

Legs very long and slender; the first pair is the longest, then the second or fourth, and the third pair is the shortest.

PHOLCUS PHALANGIOIDES. Pl. XV, fig. 137.

Pholcus phalangioides, Walck., Hist. Nat. des Insect. Apt., tom. i, p. 652.

— — Latr., Gen. Crust. et Insect., tom. i, p. 99.

— — Hahn, Die Arachn., Band ii, p. 34, tab. 50, fig. 119.

— — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 20.

— — Blackw., Linn. Trans., vol. xix, p. 125.

— — Blackw., Annals and Mag. of Nat. History, second series, vol. viii, p. 447.

— *opilionoides*, Koch, Die Arachn., Band iv, p. 95, tab. 135, fig. 311.

Length of the female, $\frac{1}{3}$ rd of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{10}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $2\frac{1}{10}$ th; length of a leg of the third pair, $1\frac{1}{10}$ th.

The cephalo-thorax is circular, slightly convex, glossy, with some long hairs in the medial line, but without the customary indentation; the anterior part, on which the eyes are situated, is prominent, and the space between those organs and the falces is broad and vertical; it is of a pale yellowish-brown colour, a brown band, the posterior part of which is the broadest, extending along the middle. The eyes are seated on black spots, the two placed transversely between those constituting the lateral triangles being much the smallest of the eight. The falces are small, vertical, united at the base, somewhat cuneiform, and armed with a short, slightly curved fang, and a single, strong tooth on the inner side, at the extremity; the maxillæ are enlarged at the base, where the palpi are inserted, and inclined towards the lip, which is short, broad, contracted at the base, dilated in the middle, and rounded at the apex; the sternum is heart-shaped. These parts are of a yellowish-brown colour, the falces and maxillæ being darkest at their extremities. The legs are very long and slender, and are provided with short, fine hairs; they have a pale-brown hue, the colour of the extremities of the femora and tibiæ being light yellowish-brown, and that of the genual joint dark-brown; the first pair is the longest, then the second, which a little surpasses the fourth pair, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and deeply pectinated, and the inferior one is inflected near its base. The palpi are short, and have a yellowish-brown tint. The abdomen is somewhat cylindrical, being rather larger at the posterior than at the anterior extremity; it is soft, thinly clothed with hairs, and of a pale yellowish-brown colour, with an irregular band of a darker hue extending along the middle of the upper part, and some obscure, dark spots on the sides; the spinners are of a yellowish-brown colour marked with dark-brown, and are situated under the extremity of the abdomen; the sexual organs have a red-brown tint; they are prominent, and have a small, cylindrical process in connexion with them, which is directed backwards.

The male greatly resembles the female, but its abdomen is slenderer, and the dark, longitudinal band on the upper part is less perfectly defined. Its falces have a small, dark, conical process near their extremity, in front, at the base of which, on the inner side, there

is a slender, pointed projection; and another small, conical process, of a lighter colour, occurs at their base, towards the outer side. The axillary joint of the palpi has a large apophysis underneath, projecting from it at right angles, on the base of which there is a pointed protuberance; the humeral joint is gibbous on the under side; the radial joint is greatly dilated, and is much larger than the cubital joint; the digital joint is small, nearly circular, convex and hairy externally, and slightly concave on the under side, with which concavity the palpal organs are connected; they are very highly developed and complicated in structure, consisting of two parts; one, directed downwards, has a bold protuberance underneath, and is enlarged, but depressed, at its extremity, which is provided with several small points; it is of a red-brown colour, the outer side, which is fringed with long hairs, being the palest; the other part, situated near the insertion of the former, is attached to the digital joint by a dark, protuberant base; it is greatly dilated, nearly globular, of a pale flesh-colour, bisected by a fine red line, and projects upwards a strong, curved, compressed process, slightly serrated on its outer edge, and having two prominences at its base, one on the outside of the curve and the other within it, the extremity of the latter being bent backwards; the colour of this part and its appendages is dark reddish-brown, and behind them there is a pale, membraneous process, directed upwards, whose extremity appears between the strong, curved process and the prominence at its base, on the inner side.

In the month of June, the female of this species deposits her eggs in a globular cocoon of a very slight texture, which she carries with her wherever she moves, holding it with the falces. Adult and immature individuals of both sexes have been received from Barmouth, in Merionethshire, from Liverpool, and from the Isle of Wight.

The spider referred to by Mr. Jesse in his 'Scenes and Tales of Country Life,' pp. 202, 203, as remarkable for the rapidity of its vibratory motions when disturbed, most probably is *Pholcus phalangioides*, which frequents ancient buildings in the south of England, and like *Epëira diadema*, *Theridion quadripunctatum*, and some other species, has the habit of violently agitating itself when anything suddenly touches its lines. That this vibratory motion, which in the case of *Pholcus phalangioides* appears to acquire its maximum velocity, is produced by the partial contraction and extension of the joints of the legs in quick succession, may be ascertained by occasioning specimens of *Epëira diadema* to continue the action till it becomes so slow, in consequence of the fatigue experienced by the animals, that there is no difficulty in determining the manner in which it is effected. This singular proceeding is evidently intended by the spider to communicate motion to its snare, and thus to cause the struggles of any insect entangled in it, by which means it is directed with certainty to its victim.

Family LINYPHIIDÆ.

The spiders included in this family, though distributed over a large part of the earth's surface, appear to be most abundant in temperate climates. Their falcæ are articulated vertically or on an inclined plane, and they have three pairs of spinners and two branchial opercula connected with the abdomen. Different species exhibit much diversity in the absolute and relative dimensions of their legs, and the tarsi are terminated by three claws.

The situations most commonly frequented by the *Linyphiidæ* are the branches and foliage of trees and shrubs, rank herbage, crevices in rocks and walls, overhanging banks, the under side of stones, and the inside of buildings. For the capture of their prey they fabricate a fine sheet of web, varying greatly in extent, on the inferior surface of which they take their station in an inverted position. Connected with adjacent objects by its margin, the web, in many instances, is further supported by fine lines intersecting one another at various angles, and having their extremities attached to its surface and to objects situated above and below it.

Genus LINYPHIA (Latr.).

Eyes disposed on the anterior part of the cephalo-thorax in two transverse rows; the four intermediate ones describe a trapezoid whose shortest side is before, and those of each lateral pair are near to each other.

Maxillæ straight, or slightly inclined towards the lip, and somewhat quadrate.

Lip semicircular, or nearly triangular.

Legs long and slender; the first pair is the longest, then the second or fourth, and the third pair is the shortest.

LINYPHIA MONTANA. Pl. XV, fig. 138.

- Linyphia montana*, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 233, pl. 16, fig. 4.
 — — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 10.
 — — Koch, Die Arachn., Band xii, p. 113, tab. 422, figs. 1038, 1039.
 — — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii,
 p. 448.
 — *triangularis*, Latr., Gen. Crust. et Insect., tom. i, p. 100.
 — — Sund., Vet. Acad. Handl., 1829, p. 215.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{15}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{1}{2}$; length of a leg of the third pair, $\frac{7}{24}$ ths.

The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is much the shortest, and those of each lateral pair are placed obliquely on a small tubercle, and are almost contiguous; the posterior eyes of the trapezoid are much the largest, and the anterior ones are the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with a large indentation in the medial line; its colour is yellowish-brown, with a narrow, brownish-black band, bifid before, extending along the middle, and a brown one on each side, parallel to the lateral margins. The falces are powerful, conical, rather divergent at the extremity, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped, and provided with some long, thinly scattered, black hairs. The maxillæ are strong, very convex underneath, and somewhat quadrate, having the exterior angle, at the extremity, curvilinear. The lip is semicircular and prominent at the apex. The falces and maxillæ are of a reddish-brown colour, the former being the redder, and the sternum and lip are of a very dark-brown hue, approaching to black. The legs and palpi are long, slender, provided with hairs and fine, erect spines, and of a yellowish-brown colour, with the exception of the thighs, which have a tinge of green. Each tarsus is terminated by three claws, the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi have at their extremity a long, slightly curved claw, minutely dentated about a third of its length from the base. The abdomen is oviform, somewhat compressed, very convex above, projecting over the base of the cephalo-thorax; it is thinly covered with hairs, glossy, and has a broad, dentated, dark-brown band, obscurely spotted with white, extending along the middle of the upper part, the posterior extremity of which is the darkest and is crossed, near the spinners, by a whitish, semicircular line, whose convexity is directed forwards; on each side of the medial band there is an irregular, longitudinal, white band; the sides have a dark-brown tint, and are marked with two white lines; the anterior one is horizontal, the posterior one, which is nearly vertical, meeting its extremity, and forming with it a right angle nearly; the under part is of a very dark-brown hue; the sexual organs are prominent, and have a small, oval process connected with their posterior margin; and the colour of the branchial opercula is dark-brown.

The abdomen of the male is nearly cylindrical, and is less distinctly marked than that of the female. The falces are very long, widely divergent at the extremity, which is armed with a long, slightly curved fang, and have a small, obtuse prominence close to the base, in front; they, with the cephalo-thorax, legs, maxillæ, sternum, and abdomen, have a reddish-brown tint, the abdomen being the darkest. The cubital and radial joints of the palpi are short, the latter being rather the stronger; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, complicated in structure, with a fine spine at their extremity, curved in a spiral form, and enveloped in membrane; they are of a reddish-brown colour. The convex sides of the digital joints are directed towards each other.

This very common spider is frequently mistaken for *Linyphia triangularis*, but may readily be distinguished from that species by its figure, by the relative size and disposition of its eyes, and by the design formed by the colours of its cephalo-thorax and abdomen; it constructs in hedges, bushes, and rank herbage, an extensive horizontal sheet of web of a fine texture, on the inferior surface of which it takes its station in an inverted position and watches for its prey. Connected with the web and with objects situated above and below it, are numerous fine lines intersecting one another at various angles; those on the upper side are the most extensive, and not only serve to support the web, but also to precipitate such insects as strike against them with their wings upon the horizontal sheet, where they are quickly seized by the vigilant and active occupant.

Inhabits Scotland and Ireland.

LINYPHIA TRIANGULARIS. Pl. XV, fig. 139.

Linyphia triangularis, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 240.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 449.

— *marginata*, Wider, Museum Senckenb., Band i, p. 253, taf. 17, fig. 5.

— — Koch, Die Arachn., Band xii, p. 118, tab. 423, figs. 1041, 1042.

Length of the female, $\frac{1}{3}$ th of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{13}$ th; length of an anterior leg, $\frac{1}{2}$; length of a leg of the third pair, $\frac{7}{24}$ ths.

The cephalo-thorax is moderately convex, glossy, elevated and slightly compressed before, rounded on the sides, which have raised margins, and has an indentation in the medial line; its colour is brown, the lateral margins having a yellowish-white hue. The falces are conical, vertical, armed with a few teeth on the inner surface, and have a brown tint, which is darkest in front. The maxillæ are straight, and the exterior angle, at their extremity, is curvilinear; the lip is semicircular and prominent at the apex; and the sternum is heart-shaped. These parts are black. The eyes are seated on black spots; the four intermediate ones describe a trapezoid whose anterior side is the shortest, and those of each

lateral pair are placed obliquely on a small tubercle, and are contiguous; the two posterior eyes of the trapezoid are the largest of the eight, and the two anterior ones, which are seated on a slight protuberance, are the smallest and darkest. The legs are long, slender, provided with hairs and a few spines, and of a yellowish-brown colour, the thighs having a tinge of green; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a slightly curved claw at their extremity. The abdomen is oviform, moderately convex above, thinly clothed with hairs, and projects a little over the base of the cephalo-thorax; the posterior is broader than the anterior part and curves abruptly to the spinners; along the middle of the upper part there extends a broad, black, slightly festooned band, which comprises, in its anterior part, a row of yellowish-white spots on each side of the medial line; this band is bounded laterally by an irregular one of a yellowish-white tint, from which two or three streaks of the same hue pass downwards on the sides of the posterior part, and a slightly curved, yellowish-white streak occurs on each side, near its anterior extremity; the black medial band is almost intersected near the summit of the posterior declivity by two transverse, oblong, yellowish-white spots which nearly meet, and between them and the spinners there are two parallel spots of the same hue; the under part is black, with a longitudinal row of yellowish-white spots on each side; the superior margin of the sexual organs, which are very prominent, is curvilinear, and a small, obtuse process, connected with their inferior margin, is directed backwards; the colour of the branchial opercula is pale yellowish-brown.

The male is slenderer, darker coloured, and less distinctly marked than the female; its legs have a yellowish-brown hue, without any tinge of green, and the digital joint of its palpi, and the palpal organs, which are highly developed and complicated in structure, are of a brownish-black colour.

Linyphia triangularis occurs in the south-eastern counties of England, but does not appear to have been met with in the northern counties, nor in Wales.

LINYPHIA MARGINATA. Pl. XV, fig. 140.

Linyphia marginata, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. 111, p. 346.

— — Blackw., Research. in Zool., p. 394.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 449.

— *montana*, Sund., Vet. Acad. Handl., 1829, p. 217.

— *resupina*, Wider, Museum Senckenb., Band i, p. 252, taf. 17, fig. 4.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 242.

— — Koch, Die Arachn., Band xii, p. 109, tab. 421, figs. 1035, 1036.

Titulus 19, Lister, Hist. Animal. Angl. De Aran., p. 64, tab. 1, fig. 19.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{13}$ th;

breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{2}{10}$ ths; length of a leg of the third pair, $\frac{3}{10}$ ths.

The legs are long, slender, provided with numerous fine, erect spines, and of a yellowish-brown colour, with brownish-black annuli; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base, which is furnished with one or two very small teeth. The palpi resemble the legs in colour, and have at their extremity a slightly curved claw, minutely dentated about a third of its length from the base. The cephalo-thorax is oval, glossy, prominent before, and depressed on the sides, which are marked with slight furrows converging towards a large indentation in the medial line; the falces are strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are somewhat quadrate, having the exterior angle at the extremity curvilinear; the lip is short, semicircular, and prominent at the apex. These parts have a very dark-brown tint, the sternum, which is the darkest, being almost black. The four intermediate eyes describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated on a small tubercle, and are almost contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones the smallest of the eight. The abdomen is oviform, sparingly clothed with short hairs, convex above, and projects over the base of the cephalo-thorax; the upper part is of a brownish-black colour, bordered by a broad, irregular, brown band which passes above the spinners, but whose continuity is interrupted in front by a black bar intersecting it at right angles; this band is very thickly spotted with white anteriorly, the white spots on the posterior part being fewer, smaller, and intermixed with some blackish ones; an indistinct series of curved, angular lines, of a brown colour, having their convex sides towards each other and their vertices directed forwards, extends along the middle, and above the spinners there are several small, yellowish-white spots; the sides are of a brown colour, minutely spotted with white, and a curved, brownish-black band extends from the anterior part of each nearly half way towards the spinners; the under part has a dark-brown hue, with four minute, yellowish-white, compound spots, forming a large quadrangle; the sexual organs, which are prominent and cylindrical, have a brownish-black tint; and the colour of the branchial opercula is brown.

The male is slenderer and darker coloured than the female, and has one tooth on the inner surface of each falx much larger than the rest. The cubital and radial joints of its palpi are short, the latter, which is much the stronger, being produced at its extremity, on the inner side, and fringed with long bristles on the outer side of the upper part; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a strong, prominent, curved, scale-like process on the inner side, which ends in a point directed obliquely downwards and outwards, and a spiral spine at their extremity, terminated by a delicate, fringed membrane; at the base of the spiral spine, on its outer side, there is an expanded, projecting, transparent membrane, slightly fringed at its margin; the colour of these organs is dark reddish-brown.

In its habits and economy this species resembles *Linyphia montana*, fabricating in low bushes or among coarse herbage an extensive snare, similar in design to the toils constructed by the *Linyphia* generally. It pairs in May, and in June the female spins one or two len-

ticular cocoons of white silk of a loose texture, which are attached to withered leaves, or other objects situated near the snare; the larger of these cocoons measures half an inch in diameter, and contains about 140 spherical eggs of a pale-yellow colour, not agglutinated together.

Inhabits Scotland and Ireland.

LINYPHIA PRATENSIS. Pl. XV, fig. 141.

Linyphia pratensis, Wider, Museum Senckenb., Band i, p. 258, taf. 17, fig. 8.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 250.

— — Koch, Die Arachn., Band xii, p. 121, tab. 423, fig. 1043.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 449.

— *sylvatica*, Blackw., Linn. Trans., vol. xviii, p. 659.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{11}$ th; length of an anterior leg, $\frac{3}{8}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The legs are long, slender, provided with hairs and fine, erect spines, and are of a yellowish-brown colour, occasionally tinged with green; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a slightly curved claw at their extremity. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides converging towards a large indentation in the medial line; the falces are powerful, conical, convex in front, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped; the maxillæ are strong and somewhat quadrate, having the exterior angle, at the extremity, curvilinear; and the lip is semicircular and prominent at the apex. These parts are of a very dark-brown colour, the cephalo-thorax being the palest. The four intermediate eyes describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated on a small tubercle, and are contiguous, or nearly so; the posterior eyes of the trapezoid are the largest of the eight. The abdomen is thinly clothed with hairs, glossy, very convex above, and projects over the base of the cephalo-thorax; a broad, longitudinal, dentated, dark-brown band, bordered with yellowish-white, occupies the middle of the upper part; the sides have a dark-brown hue, a large, irregular, yellowish-white band extending along each, and uniting above the spinners; and the colour of the under part and the branchial opercula is dark-brown, the latter having a tinge of red; the sexual organs have two large, external orifices, and a small, oval process connected with their inferior margin.

The male bears little resemblance to the female. Its figure is much slighter, and its falces, which are very powerful, have a small, obtuse prominence at the base, numerous minute tubercles in front and on the outer side, and are armed with a large tooth and several

smaller ones on the inner surface. The maxillæ are somewhat inclined towards the lip. The legs have a yellowish-red hue, the haunches and thighs being the reddest. The radial joint of the palpi is larger than the cubital, is somewhat produced at its extremity, in front, and has some long, slender bristles on the outer side; the digital joint is of an elongated oval form, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a pointed, corneous process directed obliquely downwards and outwards, and a spiral spine, enveloped in membrane, at their extremity; their colour is dark reddish-brown. The abdomen is nearly cylindrical, projecting a little over the base of the cephalo-thorax; it is glossy, and of a dark-brown hue, with an irregular, white spot on each side of its anterior extremity.

Since the publication of the description of this spider, under the specific name of *sylvatica*, in the eighteenth volume of the 'Transactions of the Linnean Society,' the suspicion of its identity with the *Linyphia pratensis* of M. Wider, there expressed, has been converted into absolute certainty by consulting M. Reuss's memoir entitled "Arachniden," contained in the first volume of the 'Museum Senckenbergianum;' consequently, the appellation *sylvatica* must rank as a synonym. It will be seen that this opinion has been adopted by M. Walckenaer, on referring to his 'Hist. Nat. des Insect. Apt.,' tom. iv, p. 499.

This species is common in England and Wales, and in the spring of 1849 an immature male, which had to undergo its final change of integument, was received from Mr. J. Hardy, who captured it in Berwickshire. Its snare is usually constructed among rank herbage growing in and near woods, and it pairs in May and June.

LINYPHIA FULIGINEA. Pl. XV, fig. 142.

Linyphia fuliginea, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 349.

— — Blackw., Research. in Zool., p. 401.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 450.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{7}{24}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

This spider, though very similar to *Linyphia pratensis*, is quite distinct from that species. Its cephalo-thorax is compressed before, rounded on the sides, convex, glossy, with a large indentation in the medial line; the falces are long, powerful, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are strong, straight, convex underneath, with the exterior angle, at the extremity, curvilinear; the lip is semicircular and prominent at the apex. These parts are of a very dark-brown colour, approaching to black, the cephalo-thorax being the palest. The four intermediate eyes form a trapezoid whose anterior side is the shortest; the posterior eyes of the trapezoid are the

largest, and the anterior ones the smallest of the eight. The legs are long, slender, provided with hairs and erect spines, and of a yellowish-brown hue faintly tinged with green; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a slightly curved claw at their extremity. The abdomen is oviform, thinly clothed with hairs, glossy, very convex above, projecting over the base of the cephalo-thorax; along the middle of the upper part there extends an obscurely dentated, dark-brown band, bordered with white, and encompassed by a dark-brown band, below which, and surrounding the whole, is a white band, whose continuity is more or less interrupted; all below the last-named band, including the branchial opercula, is of a dark-brown hue, approaching to black; the external orifices of the sexual organs are exceedingly minute, and a small, semicircular process is connected with their inferior margin.

The sexes differ from each other in various particulars. The male is smaller and slenderer than the female, its cephalo-thorax is longer, its maxillæ are somewhat enlarged at the extremity, and its legs have a light red-brown tint. The palpi resemble the legs in colour, with the exception of the radial and digital joints, which have a brownish-black hue; the cubital and radial joints are short, the latter being much the stronger, particularly at its extremity; the digital joint is of an oblong-oval form, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a process directed upwards, which extends beyond the base of the joint, and a long, filiform, prominent spine enveloped in a delicate membrane, and curved upwards and somewhat outwards in a circular form; their colour is brownish-black tinged with red. The convex sides of the digital joints are directed towards each other. The abdomen is nearly cylindrical, glossy, and of a brownish-black hue, with a white spot on each side of its anterior extremity.

Linyphia fuliginea is found in various parts of North Wales and Lancashire; it pairs in June, and constructs a snare of moderate dimensions among the grass of meadows and pastures. The male closely resembles the male of *Linyphia pratensis*, but may be distinguished from it by its inferior size, and by the structure of its palpal organs.

LINYPHIA RUBEA. Pl. XV, fig. 143.

Linyphia rubea, Blackw., Linn. Trans., vol. xviii, p. 661.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. viii, p. 450.

Length of the female, $\frac{3}{20}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{11}$ st; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{7}$ th.

The cephalo-thorax is oval, slightly compressed before, convex, glossy, with a large indentation in the medial line; it is of a yellowish-brown colour, with the exception of the anterior part, which has a dark-brown tint. The falces are powerful, conical, armed with

teeth on the inner surface, and slightly inclined towards the sternum, which is broad and heart-shaped; the maxillæ are robust, straight, and have the exterior angle, at the extremity, curvilinear; the lip is semicircular and prominent at the apex. These parts are of a dark-brown colour, the falces and lip being the darkest. The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and the two anterior eyes of the trapezoid are the smallest of the eight. The legs are slender, provided with hairs and erect spines, and of a yellowish-brown colour tinged with green; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are of a yellowish-brown hue, and have a slightly curved claw at their extremity. The abdomen is oviform, thinly clothed with hairs, glossy, very convex above, projecting over the base of the cephalo-thorax; a broad, dentated, brown band, which is darkest at its posterior extremity, extends along the middle of the upper part, nearly to the spinners, and on each side of this band there is an irregular white one; these white bands unite immediately above the spinners, and a short, brown streak is directed upwards from each side of the anus; the sides are of a brown colour obscurely mottled with yellowish spots, and are marked with two yellowish lines on the lower part, the anterior one being horizontal, and the posterior one nearly vertical; the under part is of a brown hue, a large space in the middle having a tinge of yellow; the sexual organs, which are of a very dark-brown colour, approaching to black, have a minute process in connexion with their inferior margin; and the branchial opercula have a brown tint.

The male is smaller and slenderer than the female, but resembles her in the design formed by the colours of its abdomen. Its cephalo-thorax, falces, maxillæ, lip, and sternum, have a tinge of red, and its legs are without the green tint perceptible on those of the other sex. The radial joint of the palpi is much stronger than the cubital, a long, slender bristle projecting from each, near its extremity, in front; the digital joint is oval, of a very dark-brown hue, convex and hairy externally, concave within, comprising the palpal organs, which are prominent, highly developed, complicated in structure, with a corneous, pointed spine, directed from the inner side obliquely downwards, and a delicate, prominent membrane at the extremity; their colour is very dark reddish-brown.

In the months of May and June this spider spins a web of moderate extent among bushes in woods and coppices in North Wales and Lancashire, where it is not uncommon. An immature female of this species, taken in Berwickshire, was received from Mr. J. Hardy in December, 1848, who has since captured adult specimens of both sexes in the same county.

LINYPHIA MINUTA. Pl. XV, fig. 144.

Linyphia minuta, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 191.

— — Blackw., Research. in Zool., p. 384.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 15.

— *domestica*, Wider, Museum Senckenb., Band i, p. 265, taf. 18, fig. 1.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 255.

Length of the female, $\frac{1}{6}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{13}$ th; length of an anterior leg, $\frac{3}{10}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The legs are slender, provided with hairs and erect spines, and of a reddish-brown hue, with black annuli; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a slightly pectinated, curved claw at their extremity. The cephalo-thorax is convex, glossy, compressed and rather prominent before, rounded on the sides, with an indentation in the medial line, and has a dark-brown tint. The falces are strong, conical, vertical, and armed with teeth on the inner surface; the maxillæ are straight, and nearly quadrate, having the exterior angle, at the extremity, curvilinear; and the lip is semicircular and prominent at the apex. These organs have a dark red-brown colour. The sternum is heart-shaped, and of a very dark-brown hue, approaching to black. The four intermediate eyes form a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a tubercle, and are contiguous; the two posterior eyes of the trapezoid are the largest, and the two anterior ones the smallest of the eight. The abdomen is oviform, glossy, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; the upper part is of a pale-brown colour, minutely spotted with yellowish-white; along the middle there extends a series of strongly marked, brownish-black, angular lines, having their vertices directed forwards, and a little above the spinners there is an irregular, transverse, curved, yellowish-white line; the sides and under part are of a brownish-black hue, the former being marked with a slightly curved, yellowish-white line, which extends from the anterior part rather more than half-way towards the spinners; the sexual organs are prominent, a flesh-coloured process connected with their anterior margin being enlarged at its extremity and directed backwards; and the colour of the branchial opercula is yellowish-white.

The sexes do not present any very remarkable differences in colour, but the male is smaller and slenderer than the female. The cubital and radial joints of its palpi are short, a strong bristle projecting from a small prominence situated at the extremity of the former, in front; the digital joint is somewhat oval, having two conical processes near its articulation with the radial joint; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complex with spine-like processes, and are of a red-brown colour. The convex sides of the digital joints are directed towards each other.

The interior of buildings, shrubs trained against walls, crevices in the bark of old trees, and lichens growing upon their trunks and branches are the haunts frequented by this common spider, which is widely distributed in England, Wales, Scotland, and Ireland. In September the female constructs several subglobose cocoons of white silk of a slight texture, the largest of which measures about one fifth of an inch in diameter, and contains from thirty to forty spherical eggs of a yellowish-white colour. The cocoons are generally attached to objects situated near the snare.

LINYPHIA CAUTA. Pl. XV, fig. 145.

Linyphia cauta, Blackw., Linn. Trans., vol. xviii, p. 655.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 15.

— — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 499.

Length of the female, $\frac{5}{8}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{7}{16}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a tubercle and are almost contiguous; the posterior eyes of the trapezoid are much the largest, and the anterior ones, which are seated on a protuberance, are the smallest of the eight. The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, with a large indentation in the medial line, and some long hairs on the anterior part, directed forwards; it is of a yellowish-brown colour, with black margins, and a band of the same hue, whose anterior extremity is greatly enlarged, extending along the middle. The falces are powerful, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped, glossy, and sparingly clothed with long, erect hairs. The maxillæ are strong, straight, somewhat quadrate, having the exterior angle, at the extremity, curvilinear, and are very convex underneath. The lip is semicircular and prominent at the apex. The falces and maxillæ are of a brown colour faintly tinged with red, and the sternum and lip have a brownish-black hue, the latter being paler at the tip. The legs are long, provided with hairs and fine, erect spines, and have a yellowish-brown tint, with brownish-black annuli; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a slightly curved and minutely dentated claw at their extremity. The abdomen is oviform, glossy, thinly clothed with hairs, very convex above, projecting over the base of the cephalo-thorax; it is of a yellowish-brown hue, freckled with small, whitish spots, which are fewer and more minute on the under part; some large, brownish-black blotches occur near the anterior extremity of the upper part, and between them and the spinners there are numerous transverse, curved lines of the same hue, whose convexities are directed forwards; the sides have a brownish-black tint, with an irregular, longitudinal, yellowish-brown band, spotted with white, extending along the middle; the spinners have a brown hue, and at the base of the inferior pair there are three confluent, yellow spots; a small, cylindrical, semi-transparent process is connected with the anterior part of the sexual organs, within the external orifice; and the colour of the branchial opercula is pale-yellow.

The male differs from the female in the following particulars; it is rather smaller, darker coloured, and the anterior part of its cephalo-thorax, where the eyes are seated, is more elevated. The cubital and radial joints of its palpi are short; the former has a long

bristle projecting from its extremity, in front, and the latter, which is the larger, is of an oval form, greatly elongated before, and overlaps the base of the digital joint; this joint is somewhat oval, with a bold, pointed process at its base, on the inner side, and a prominent lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are depressed, very highly developed, and remarkably complicated in structure, having a strong, curved, corneous process at their base, on the outer side, which has an obtuse protuberance on its upper part, and a pair of exceedingly long, filiform, black spines, of unequal thickness, enveloped in a transparent membrane, and curved into a circle measuring about $\frac{1}{16}$ th of an inch in diameter; these organs are of a red-brown colour.

Angles of walls, overhanging banks, and depressions in the trunks of large trees are the situations in which *Linyphia cauta* fabricates its extensive snare. Though rarely seen, in consequence of the habit of remaining in its retreat during the day, yet it is rather abundant in many parts of England, Wales, and Ireland.

The *Linyphia thoracica* of M. Wider ('Museum Senckenbergianum,' B. i, p. 261, taf. 17, fig. 10) appears to be nearly allied to this species, but it is difficult to determine whether they are identical or not, as no description or figure is given of the male.

LINYPHIA VIVAX. Pl. XVI, fig. 146.

Linyphia vivax, Blackw., Linn. Trans. vol. xviii, p. 657.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 15.

— — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 499.

Length of the female, $\frac{5}{32}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{11}$ th; length of an anterior leg, $\frac{1}{2}$; length of a leg of the third pair, $\frac{1}{3}$ rd.

The cephalo-thorax is oval, convex, glossy, with a large indentation in the medial line, and is of a yellowish-brown colour, with an irregular, longitudinal, blackish band on each side, and a finer one of the same hue, which is bifid before, extending along the middle. The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a tubercle and are contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones the smallest of the eight. The falces, which have a reddish-brown tint, are powerful, conical, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped, with long, erect, black hairs, and is of a dark-brown hue. The maxillæ are short, strong, straight, convex underneath, somewhat quadrate, and resemble the falces in colour. The lip is semicircular and prominent at the apex, which is of a reddish-brown hue, the base being blackish. The legs are long, slender, provided with hairs and numerous erect spines, and of a reddish-brown colour, with brownish-black annuli; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior

one is inflected near its base. The palpi resemble the legs in colour, and have a slightly curved claw at their extremity. The abdomen is oviform, pointed at the spinners, very convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, and of a yellowish-brown colour, freckled with numerous, minute, whitish spots; along the middle of the upper part there extends a series of angular lines of a brownish-black hue, whose vertices are directed forwards, and whose greatly enlarged extremities form a row of very conspicuous, irregular spots on each side of the medial line; several of the anterior angles are bisected by a fine, brownish-black line; two longitudinal, irregular, brownish-black bands occur on each of the sides, the upper one being connected with the enlarged extremities of the angular lines by small, confluent spots of the same hue; a large, brownish-black band, whose anterior extremity is the broadest, occupies the middle of the under part, and comprises a yellowish-brown, medial line; the sexual organs are prominent, and have a brownish-black tint, with the exception of the extremity, which is flesh-coloured; and the colour of the branchial opercula is pale-yellow.

The male, though smaller than the female, resembles her in the design formed by the distribution of its colours. The cubital and radial joints of its palpi are short, the former, which is the larger, having several long, curved bristles projecting from its extremity, in front; the radial joint is gibbous underneath, and has three short apophyses before, the middle one, which is the largest and darkest coloured, being transversely striated in front; the digital joint is somewhat oval, with a slightly curved, conical process at its base, in front; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a slightly curved, pointed spine, and a finer one enveloped in a semitransparent membrane, at their extremity; they are of a red-brown colour. The convex sides of the digital joints are directed towards each other.

Both sexes of this spider, which bears a striking resemblance to *Linyphia cauta*, were discovered in the greenhouse and melon-pits belonging to Mrs. Darbishire, of Green Heys, near Manchester, in September, 1836.

In the account of *Linyphia vivax* given in the eighteenth volume of the 'Transactions of the Linnean Society,' a doubt is implied as to its being distinct from the *Linyphia globosa* of M. Wider ('Museum Senckenbergianum,' B. i, p. 259, taf. 17, fig. 9); however, an attentive perusal of the description and an inspection of the figure of the latter have induced the conviction that they are different species.

LINYPHIA SOCIALIS. Pl. XVI, fig. 147.

Linyphia socialis, Sund., Vet. Acad. Handl., 1832, p. 160.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 16.

— *annulipes*, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 348.

— — Blackw., Research. in Zool., p. 398.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{1}{3}$ rd; length of a leg of the third pair, $\frac{1}{5}$ th.

The cephalo-thorax is oval, slightly compressed before, convex, glossy, with an indentation in the medial line; it is of a pale yellowish-brown colour, with black lateral margins, immediately above which there is a longitudinal row of triangular, black spots, and a band of the same hue, bifid before, extends along the middle. The falces are long, conical, divergent at the extremity, provided with several slender spines in front, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are straight, somewhat quadrate, having the exterior angle, at the extremity, curvilinear; and the lip is semicircular and prominent at the apex. These parts have a yellowish-brown tint, the maxillæ and sternum being the palest. The legs are long, slender, provided with a few erect spines, and of a pale yellowish-brown colour, with brownish-black annuli; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base, where there are one or two very minute teeth. The palpi have numerous long spines on their radial and digital joints, and a slightly curved claw, minutely dentated about a third of its length, at their extremity; their colour is similar to that of the legs. The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a small tubercle, and are contiguous; the anterior eyes of the trapezoid are the smallest of the eight and very near to each other. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; the upper part is of a greenish-white colour, reticulated with fine, yellowish-green, or greenish-brown lines, and has a series of greenish-brown, angular lines, whose vertices are directed forwards, extending along the middle; at its anterior extremity there is a curved, black band, comprising four white spots disposed transversely, which extends rather more than half of its length along the sides; from each extremity of this band a black line passes obliquely upwards and forwards, forming with it an acute angle, and between the angular point and the spinners there are two oblique, black streaks united near the middle; below the band and streaks numerous yellowish-white spots occur; the under part has a reddish-brown tint, with a few minute, yellowish-white spots, and a black streak passes above the exterior margin of the branchial opercula, which have a pale yellowish-white hue; a long, depressed process of a red-brown colour, directed backwards, is connected with the sexual organs.

The colours of the sexes and the design formed by their distribution are similar, but the male is smaller than the female. The cubital and radial joints of its palpi are short, the latter, which is the stronger, being very convex on the outer side; the digital joint is somewhat oval, with a pointed process at its base, curved outwards, and a prominent lobe on its outer side; it is convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complex, with corneous processes, the largest, which is obtuse, curving above the base of the joint, and are of a red-brown colour.

As the opinion entertained by Professor Sundevall, that *Linyphia socialis* and *Linyphia annulipes* are identical, appears to be correct, the former name, imposed upon this species by the Professor, must take precedence of the latter.

This spider, which occurs in autumn on the trunks of trees in woods at Oakland, M. Walckenaer has portrayed in his 'Hist. Nat. des Insect. Apt.' pl. xxi, fig. f. 2 D, under the name of *Thérion gonflé*; but has prefixed to his description of it, tom. ii, p. 274, the appellation of *Linyphia bucculenta*, conferred by Professor Sundevall on a very different species; namely, on that designated *Linyphia reticulata*, by M. Walckenaer ('Vet. Acad. Handl.,' 1831, p. 109).

Both sexes of *Linyphia socialis* have been received from Mr. J. Hardy, who took them in Berwickshire.

LINYPHIA CRYPTICOLENS. Pl. XVI, fig. 148.

Linyphia crypticolens, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 275.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 16.

— *nebulosa*, Sund., Vet. Acad. Handl., 1829, p. 218.

— *pallidula*, Blackw., Research. in Zool., p. 403.

Meta cellulana, Koch, Die Arachn., Band viii, p. 123, tab. 287, figs. 691, 692.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{14}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{13}{34}$ ths; length of a leg of the third pair, $\frac{7}{24}$ ths.

The legs are long, slender, moderately hairy, and of a pale yellowish-brown hue, with black annuli; the first pair is the longest, the fourth pair rather surpasses the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a tubercle and are almost contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones the smallest of the eight. The cephalo-thorax is compressed before, rounded on the sides, convex, glossy, with furrows on the sides converging towards a large indentation in the medial line; it is of a pale yellowish-brown colour, with black lateral margins, a black spot in front, between the eyes and the falces, and a band of the same hue, which is contracted near the middle, extending along the medial line. The falces are conical, vertical, and armed with a few teeth on the inner surface; the colour of their base is yellow-brown, that of their extremity pale red-brown, and they have a black streak in front. The maxillæ are straight, somewhat quadrate, and of a pale yellowish-brown hue, with the inner margin black, and a spot of the same tint on the outer side. The lip, which is somewhat quadrate, is blackish at the base and yellowish-brown at the apex. The sternum is heart-shaped, and has small prominences on the sides, opposite to the legs; it is of a pale yellowish-brown colour, with black margins. The abdomen is oviform, slightly hairy, very convex above,

projecting over the base of the cephalo-thorax ; it is of a pale yellowish-brown colour, marked with black lines ; one, curved in front and passing to the sides, has its extremities enlarged, and several short, longitudinal ones, slightly inclined towards each other, extend, in pairs, along the middle of the upper part, about half of its length, the first pair uniting before in the curved, frontal line ; between them and the spinners there are two parallel rows of oblique lines whose anterior extremities nearly meet, and a few irregular lines, diverging from those near the medial and posterior regions, extend to the sides ; on the under part, near its connexion with the cephalo-thorax, there is a small, transverse, black streak, and in the middle two oblique, black lines occur, which almost unite near the spinners, but diverge widely and abruptly at their anterior extremities ; the spinners have a yellowish-brown tint ; a pair of small, black spots is situated on each side of them, near their base, and a larger one, of a triangular form, underneath ; the branchial opercula are whitish ; and the colour of the sexual organs is red-brown.

The male is smaller and darker coloured than the female, and its legs have a redder hue, the black annuli with which they are marked being fewer and less distinct. The palpi have a pale red-brown tint ; the humeral joint is long, and the cubital and radial joints are short, the latter being the stronger ; the digital joint is somewhat oval, with a very large, prominent process at the base, which is curved downwards, and an angular projection near the middle of the outer side ; it is convex and hairy externally, concave within, comprising the palpal organs ; they are highly developed, complicated in structure, with a strong, black, prominent process at the upper part, on the inner side, which is directed downwards, and has an obtuse projection on its upper side ; a very prominent, membranous, semitransparent process, curved and black at its point, is situated a little lower, on the same side ; and opposite to it, on the outer side, there is an erect, black spine, pointed and slightly curved at its extremity, and having a prominent, bilobed process at the upper part of its base, and the point of a long, black spine, which is curved under the processes on the inner side, in contact with its lower part ; these organs are of a red-brown colour. The convex sides of the digital joints are directed towards each other.

On examining specimens of this spider in the summer of 1834, it was found to possess the essential characters of a *Linyphia*, and was described in the 'Researches in Zoology' as new to science, under the specific name of *pallidula*. Since then it has been ascertained that M. Walckenaer had included it among the *Theridia*, in his 'Tableau des Aranéïdes,' p. 75, and that Professor Sundevall had previously described it in his excellent publications in this department of zoology.

Linyphia crypticolens is met with in North Wales under stones, and in cellars, vaults, and other obscure, damp places. In June or July the female constructs a globular cocoon of yellowish-brown silk of a loose texture, measuring one-sixth of an inch in diameter ; it is commonly attached to her spinners by fine lines, and contains about ninety-eight spherical eggs of a brown colour, not adherent among themselves.

LINYPHIA ALTICEPS. Pl. XVI, fig. 149.

Linyphia alticeps, Sund., Vet. Acad. Handl., 1832, p. 261.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 17.

— *luteola*, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 192.

— — Blackw., Research. in Zool., p. 390.

Length of the female, $\frac{1}{5}$ th of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{2}{3}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The cephalo-thorax is convex, glossy, compressed, prominent, and somewhat pointed before, rounded on the sides, and has an indentation in the medial line; the falces are conical, vertical, and armed with teeth on the inner surface; the maxillæ are straight, and nearly quadrate; the lip is semicircular and prominent at the apex; the sternum is heart-shaped; the legs are long, slender, and provided with fine, erect spines; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base; the palpi are rather short, and have a slightly pectinated, curved claw at their extremity. These parts are of a pale yellowish-brown colour, with the exception of the lateral margins of the cephalo-thorax, and a fine line extending along its middle, which are black. The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a tubercle, and are contiguous; the two posterior eyes of the trapezoid are the largest, and the anterior ones the smallest of the eight. The abdomen is oviform, glossy, compressed, very convex above, projecting over the base of the cephalo-thorax; it is of a pale-yellow colour, with minute, white spots on the upper part; the sides are obscurely marked with oblique lines of a blackish hue, and above the spinners there are several angular ones of a similar tint; the colour of the branchial opercula is yellow. The black lines on the abdomen of some individuals are almost obliterated.

The male is smaller and slenderer than the female, but its cephalo-thorax is longer, very prominent and pointed before, and provided with numerous strong, black bristles, particularly at the apex. Its maxillæ also are remarkably convex externally. The humeral joint of its palpi is robust; the cubital and radial joints are short, a strong bristle, rough with projecting points on the under side, depending from a protuberance at the extremity of the former, in front; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are complicated in structure, with a curved, pointed process at their base, and are of a red-brown colour.

The conclusion arrived at by Professor Sundevall, that *Linyphia alticeps* and *Linyphia luteola* are the same species, is perfectly correct; but M. Walckenaer is certainly mistaken in regarding it as identical with his *Argus cornutus* ('Hist. Nat. des Insect. Apt.', tom. ii, p. 368), from which it differs remarkably in structure, colour, habits and economy.

Specimens of this interesting *Linyphia* have been procured in Lancashire and Denbighshire; Mr. R. H. Meade has taken it in Yorkshire, and Mr. J. Hardy in Berwickshire. The male has the palpal organs fully developed in autumn, at which season both sexes are plentiful in the plantations about Crumpsall Hall, near Manchester, constructing snares of moderate extent among coarse grass beneath the trees. Like other species of the genus, they are usually seen on the under side of the horizontal sheet of web in an inverted position.

LINYPHIA LONGIDENS. Pl. XVI, fig. 150.

Linyphia longidens, Wider, Museum Senckenb., Band i, p. 270, taf. 18, fig. 5.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 264.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 17.

— *tardipes*, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 488.

Length of the female, $\frac{1}{6}$ th of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{5}{24}$ ths; length of a leg of the third pair, $\frac{1}{6}$ th.

The eyes are seated on black spots; the four intermediate ones form a square nearly, and the two anterior ones are the largest of the eight; those of each lateral pair are placed obliquely on a small tubercle and are contiguous. The cephalo-thorax is oval, convex, glossy, depressed and somewhat rounded before, with an indentation in the medial line; it is of a reddish-brown colour, with a broad, brownish-black band extending along each side. The falces are powerful, conical, divergent at the extremity, armed with a long fang, slightly curved at its point, and with two rows of teeth on the inner surface, those of the anterior row being remarkably long and fine; they are inclined towards the sternum, which is heart-shaped and finely pointed at its posterior extremity; the maxillæ are strong, straight, and somewhat quadrate, and the lip is semicircular and prominent at the apex. These parts have a reddish-brown tint, the sternum and lip being rather the darkest. The legs are moderately robust, provided with hairs and a few erect spines, and are of a reddish-brown colour, with obscure, brownish-black annuli; the first pair is the longest, the second and fourth pairs are nearly equal in length, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved, and the inferior one is inflected near its base. The palpi, which are of a reddish-brown hue, and are furnished with spines, have a slightly curved, slender claw at their extremity. The abdomen is oviform, rather broader at the posterior than at the anterior extremity, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a reddish-brown colour on the upper part, with a few minute, whitish spots interspersed, and a series of large, brownish-black blotches extending along each side of the medial line; these blotches unite as they approach the spinners, and form transverse, curved bars; the sides are of a brownish-black hue minutely freckled with reddish-brown; the under part has a dark-brown, or brownish-black tint; and

the colour of the branchial opercula is pale-yellow; a large, very prominent, curved process, of a dark red-brown hue, is connected with the sexual organs; it is abruptly contracted in the curvature, and is recurved at its extremity, which is enlarged and deeply notched.

The male, which resembles the female in colour, has some longish black bristles, directed forwards, on the anterior part of the cephalo-thorax, which is prominent. The cubital and radial joints of its palpi are short; the latter is the stronger, and a long, slender bristle projects from the extremity of the former, in front; the digital joint is somewhat oval, but is gibbous on the outer margin, and has a large process at its base, which is curved outwards and notched at its extremity; it is convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complicated in structure, provided with several curved, corneous processes, and are of a red-brown colour. The convex sides of the digital joints are directed towards each other.

On obtaining a copy of the first volume of the 'Museum Senckenbergianum,' and comparing the description of M. Wider's *Linyphia longidens* with that of *Linyphia tardipes*, it was immediately perceived that they are specifically the same.

This spider is found in Denbighshire, Yorkshire, and Lancashire, under stones and detached pieces of rock, and in December 1848, an adult female was received from Mr. J. Hardy, who took it in Berwickshire. It pairs in August and September, and the female fabricates several cocoons of white silk of a fine but compact texture, which she attaches to the inferior surface of stones by a small web; they are flat on the side in contact with the stones, and convex, with a depressed margin, on the opposite side. The largest of these cocoons measures one-fourth of an inch in diameter, and contains about forty spherical eggs of a pale-yellow colour, not agglutinated together, but enveloped in delicately soft silk. The snare of this species consists of a small, compact, horizontal sheet of web constructed in cavities beneath stones, on the under side of which it takes its station in an inverted position. In the disposition and relative size of its eyes an approximation to the *Theridia* may be traced.

LINYPHIA FRENATA. Pl. XVI, fig. 151.

Linyphia frenata, Wider, Museum Senckenb., Band i, p. 269, taf. 18, fig. 4.

— — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 279.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 18.

— *pallida*, Blackw., Linn. Trans., vol. xix, p. 126.

Theridium pallidum, Koch, Die Arachn., Band iii, p. 64, tab. 94, fig. 216.

Length of the female, $\frac{3}{16}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{13}{24}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The legs are long, slender provided with hairs and erect spines, and of a pale yellowish-

brown hue, with a faint tinge of green, particularly on the thighs, and an obscure, blackish annulus at the extremity of each principal joint; the first pair is the longest, then the second, and the third pair is the shortest; the tarsi are terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are of a pale yellowish-brown colour, and have a slightly curved claw at their extremity. The cephalo-thorax is oval, convex, glossy, with furrows on the sides converging towards a large indentation in the medial line; it is of a pale yellowish-brown colour, with a longitudinal, black band immediately above each lateral margin. The falces have a reddish-brown hue; they are long, powerful, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped, and of a brownish-black tint. The maxillæ are powerful, straight, somewhat quadrate, and of a pale reddish-brown colour, with a blackish spot on the inner angle, at the extremity. The lip is semicircular, prominent at its apex, and resembles the sternum in colour. The eyes are seated on black spots, those of each lateral pair being placed on a small tubercle and nearly contiguous; the anterior eyes of the trapezoid are not smaller than the rest. The abdomen is remarkably gibbous above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a pale reddish-brown colour; the anterior half of the upper part is thickly spotted with white, and a series of black spots occurs on each side of the medial line of the posterior half, those near the spinners uniting and forming short, transverse bars; the sides are marked with irregular black streaks; the hue of the branchial opercula is yellow, and the space between them has a brownish-black tint; a depressed process, directed backwards, is connected with the anterior margin of the sexual organs, and their colour is reddish-brown.

The male resembles the female in colour, but its legs are longer than hers, an anterior one measuring seven-tenths of an inch. The anterior part of its cephalo-thorax, where the eyes are seated, is greatly elevated, rounded at the summit, and provided with numerous curved, black hairs. The falces are long and divergent at the extremity. The humeral joint of the palpi is robust; the cubital and radial joints are short, the latter being the stronger; both have a few long bristles at their extremity, in front, which are directed forwards; the digital joint is broader at the extremity than at the base, which is rather protuberant; it is of a light reddish-brown colour, is slightly convex and hairy externally, concave within, and comprises the palpal organs; they are highly developed, very complicated in structure, with a prominent spine underneath, which is enveloped in membrane, abruptly curved near its base, and directed downwards; a large, convex, glossy process occurs at their extremity, on the outer side, and near it, towards the inner side, there is a short, strong, curved, pointed spine; the colour of these organs is very dark and light reddish-brown intermixed. The convex sides of the digital joints are directed towards each other.

Not perceiving that the *Theridium pallidum* of M. Koch is identical with the *Linyphia frenata* of M. Wider, M. Walckenaer has included it among the synonyma of *Theridium sisypum* ('Hist. Nat. des Insect. Apt.,' tom. ii, p. 299).

In autumn this rare species spins among grass growing in the grounds about Oakland an extensive horizontal sheet of web supported by fine lines united to its superior surface and to each other at various angles, and attached by their upper extremities to objects situated above it. Like its congeners, it takes its station on the under side of the web in an inverted position, and there watches for its prey. An adult male *Linyphia frenata* was received in 1851 from Mr. R. H. Meade, who captured it in Yorkshire.

LINYPHIA TENUIS. Pl. XVI, fig. 152.

Linyphia tenuis, Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 18.

— *pusilla*, Blackw., Research. in Zool., p. 392.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{32}$ nd, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{3}{16}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is somewhat oval, slightly compressed before, rather prominent in front, where the eyes are situated, convex and glossy, with an indentation in the medial line, the falces are powerful, conical, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped; the maxillæ have the exterior angle, at their extremity, curvilinear; and the lip is semicircular. These parts are of a dark-brown colour, the lip and the lateral margins of the cephalo-thorax being the darkest, and the falces and maxillæ having a faint tinge of red. The eyes are seated on black spots; the four intermediate ones describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a small tubercle, and are contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones, which are seated on a protuberance, are the smallest of the eight. The legs are long, slender, provided with hairs and fine, erect spines, and of a yellowish-brown colour; the first pair is the longest, the second pair slightly surpasses the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, glossy, thinly clothed with hairs, pointed at the spinners, convex above, and projects over the base of the cephalo-thorax; it is of a light-brown colour, thickly freckled with pale yellowish-white on the upper part, and has a series of curved, angular, black lines extending along the middle, which have their convex sides towards each other, their extremities greatly enlarged, and their vertices directed forwards; the sides and under part have a brownish-black tint; a longitudinal, slightly curved, pale yellowish-white line occurs on the anterior half of the former, and a semicircular one of the same hue passes above the spinners; the sexual organs have a light yellowish-brown septum in the medial line, which is enlarged at its posterior part, and a very minute process in connexion with their inferior margin; the colour of the branchial opercula is yellowish-brown.

The form of the male is slighter, and its colour is darker than that of the female. The cubital and radial joints of its palpi are short, the latter being very strong, and prominent at its extremity, in front; the digital joint is somewhat oval, with a lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a dark red-brown colour.

The specific name of this spider has been changed from *pusilla* to *tenuis*, the former appellation having been previously conferred on a small Swedish *Linyphia* by Professor Sundevall ('Vet. Acad. Handl.,' 1829, p. 214.)

Linyphia tenuis is of frequent occurrence among grass and under stones, and is widely distributed in England, Wales, and Scotland.

LINYPHIA TERRICOLA. Pl. XVI, fig. 153.

Linyphia terricola, Koch, Die Arachn., Band xii, p. 125, tab. 425, fig. 1047, 1048.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 118.

Length of the female, $\frac{1}{9}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{14}$ th; breadth of the abdomen, $\frac{1}{18}$ th; length of an anterior leg, $\frac{11}{48}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a small tubercle, and are nearly contiguous; the posterior eyes of the trapezoid are rather the largest, and the anterior ones, which are seated on a protuberance, are much the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are powerful, conical, armed with teeth on the inner surface, and slightly inclined towards the sternum; the legs and palpi are long, slender, and provided with hairs and some fine, erect spines; and the maxillæ are straight, and have the exterior angle, at their extremity, curvilinear. These parts are of a yellowish-brown colour, the legs being the palest, and the falces and maxillæ having a tinge of red. The lip, which is semicircular, is prominent at the apex; and the sternum is heart-shaped. Both these parts have a dark-brown hue. The first pair of legs is the longest, the second pair slightly surpasses the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The abdomen is oviform, glossy, sparingly clothed with hairs, very convex above, projecting over the base of the cephalo-thorax; the upper part is of a pale reddish-brown colour, freckled with yellowish-white, more especially towards the sides, and has a series of curved, brownish-black, angular lines extending along the middle, which have their convex sides towards each other, and their vertices directed forwards; the sides and under part have a dark-brown hue, the former being marked with a slightly curved, pale reddish-brown line, freckled with yellowish-white; the colour of the branchial opercula is yellowish-white; that of the sexual organs is red-brown, a longitudinal process, enlarged at its posterior extremity, being connected with their anterior margin, and a very minute one with their inferior margin.

The male is smaller, lighter coloured, and less distinctly marked than the female. Its palpi have a yellowish-brown hue, the radial and digital joints being much the darkest; the radial joint is larger than the cubital, and is most prominent at its extremity, in front; the digital joint is short, somewhat oval, with a lobe on the outer side, broad at the extremity, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complex in structure, with a few very short, projecting, black points at their extremity, towards the outer side, and are of a red-brown colour.

This spider, which varies considerably in colour, bears a striking resemblance to *Linyphia tenuis*; but the more slender form of the latter, the larger size of the anterior eyes of the

trapezoid, which are somewhat wider apart, and are seated on a less prominent protuberance of the cephalo-thorax, together with slight modifications in the structure and development of the palpal organs of the male, serve, independently of colour, to distinguish it from the former, with which it has probably been confounded. *Linyphia terricola* is common among moss growing in woods in many parts of England and Wales; it occurs also in Scotland and Ireland, and the sexes arrive at maturity in July and August.

The length of the male of this species given by M. Koch in the text is incorrect, but the line representing it in the plate rectifies the error.

M. Walckenaer has added *Linyphia terricola* to the synonyma of his *Linyphia bucculenta* ('Hist. Nat. des Insect. Apt.' t. iv, p. 485), which is a very different species, and is identical with the *Linyphia socialis* of Professor Sundevall, the name *Linyphia bucculenta* having been conferred by the Swedish naturalist on the species denominated *Linyphia reticulata* by M. Walckenaer.

LINYPHIA MEADII. Pl. XVI, fig. 154.

Linyphia Meadii, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 17.

— — Blackw., Ibid., p. 119.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{17}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides converging towards an indentation in the medial line; the falces are powerful, conical, nearly vertical, divergent at the extremity, and armed with teeth on the inner surface; the maxillæ are straight, with the exterior angle, at the extremity, curvilinear; the legs and palpi are provided with hairs and fine spines. These parts are of a light yellow-brown colour, the legs and palpi being rather the palest. The lip is semicircular and prominent at the apex; and the sternum is short, broad, and heart-shaped. These parts are browner than the cephalo-thorax, the margins of the sternum being the darkest. The first pair of legs is the longest, the second pair rather surpasses the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The eyes are seated on black spots; the four intermediate ones describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a small tubercle and are nearly contiguous; the anterior eyes of the trapezoid are the smallest of the eight. The abdomen is oviform, thinly clothed with hairs, convex above, and projects over the base of the cephalo-thorax; it is of a dull, olive-green colour, with a series of obscure, pale yellowish-brown, oblique streaks on each side of the medial line of the upper part, and a band of the same hue extending along each side; a large, prominent, red-brown process, connected with the anterior margin of the sexual organs, is directed backwards; and the colour of the branchial opercula is pale-yellow.

The sexes are similar in colour, but the abdomen of the male is slenderer than that of the female, and its maxillæ are slightly inclined towards the lip. The cubital and radial joints of its palpi are short, the latter being most produced at its extremity, on the inner side; the digital joint is somewhat oval, with a large lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complex in structure, with a large process at their base consisting of three parts; the superior one, which is curved at its extremity, is in contact with the radial joint, on the outer side, and the other two are directed downwards, the one which is situated nearer to the inner side, and is the slenderer and more curved, having a projection on the outside of its curvature and another within, nearer to its base; a short, prominent, curved process, whose point is in contact with a small, semitransparent membrane, occurs at the extremity of these organs, and their colour is red-brown of various shades. The convex sides of the digital joints are directed towards each other.

Early in May, 1852, adult individuals of both sexes of *Linyphia Meadii* were taken by Mr. R. H. Meade, under a stone in a pasture at Low Moor, near Bradford.

LINYPHIA CLAYTONIÆ. Pl. XVI, fig. 155.

Linyphia Claytoniæ, Blackw., Linn. Trans., vol. xviii, p. 664.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 19.

— — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 499.

— *anthracina*, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 18.

— — Blackw., Ibid., p. 119.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{3}{10}$ ths.

The legs are long, slender, provided with hairs and a few fine spines, and, with the palpi, have a bright, yellowish-red hue. The first pair of legs is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are powerful, conical, armed with a few teeth on the inner surface, and inclined towards the sternum, which is heart-shaped, convex, and glossy; the maxillæ are straight, with the exterior angle, at the extremity, curvilinear; and the lip, which is semicircular, is prominent at the apex. These parts are of a very dark-brown colour. The four intermediate eyes describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a tubercle, and are nearly contiguous; the anterior eyes of the trapezoid are the smallest of the eight. The abdomen is oviform, and of a glossy-

black hue, with an obscure series of angular lines of a yellowish-brown colour, whose vertices are directed forwards, extending along the middle of the upper part; it is sparingly supplied with hairs, convex above, and projects over the base of the cephalo-thorax; the sexual organs have a dark-brown hue; a prominent process is connected with their anterior and another with their posterior margin; the former, which is much the larger, is nearly semicircular, concave within, and has a longitudinal septum in the middle; the posterior one is somewhat enlarged at its extremity, and directed obliquely backwards.

The sexes are similar in colour, but the figure of the male is slighter than that of the female; there are some fine bristles, directed forwards, on the middle of the anterior part of its cephalo-thorax, and the falces have a small protuberance in front, near the base. The palpi are short, and of a bright, yellowish-red colour, with the exception of the digital joint, which has a dark-brown hue; the radial is stronger than the cubital joint, and is rather produced in front; the digital joint is somewhat oval, with a lobe on the outer side, near the base; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complex in structure, with two contiguous, curved spines near their middle, a compressed, curved process at the base, on the outer side, a pointed one on the inner side, and are of a red-brown colour.

This species varies greatly in colour; some individuals have the yellowish-brown, angular lines extending along the middle of the upper part of the abdomen very distinctly marked; others have the ground-colour of the abdomen yellow-brown, and the angular lines black; and occasionally specimens may be found with the abdomen of a uniform black, or yellowish-brown hue.

The original description of *Linyphia Claytoniæ* was made from adult males received from Miss Ellen Clayton, who took them near Garstang, in Lancashire. In 1852, Mr. R. H. Meade captured adult females at Bradford, in Yorkshire, which were described as a distinct species, under the name of *Linyphia anthracina*; however, a careful examination of both sexes, found in considerable numbers in the summer of 1860 by the Rev. O. P. Cambridge, at Bloxworth, in Dorsetshire, has served to establish the fact that they are specifically identical.

LINYPHIA PULLA. Pl. XVI, fig. 156.

Linyphia pulla, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 19.

— — Blackw., Ibid., p. 119.

Length of the female, $\frac{1}{3}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{11}{48}$ ths; length of a leg of the third pair, $\frac{3}{20}$ ths.

The four intermediate eyes describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a tubercle, and are almost contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones much the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial

line; the falces are powerful, conical, armed with a few teeth on the inner surface, slightly divergent at the extremity, and inclined towards the sternum, which is heart-shaped; the maxillæ are straight, with the exterior angle, at the extremity, curvilinear; and the lip is semicircular and prominent at the apex. These parts are of a brown-black colour, the sternum, lip, and lateral margins of the cephalo-thorax being the darkest, and the falces having a tinge of red. The legs are long, slender, provided with hairs and a few fine spines, and have a light yellow-brown hue; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The palpi have a dark-brown tint, with the exception of the humeral joint, which has a yellowish-brown hue. The abdomen is oviform, glossy, sparingly clothed with short hairs, convex above, projecting over the base of the cephalo-thorax; it is of a brown-black colour, with a sharply dentated, pale yellow-brown band extending along the middle of its upper part, and a rather obscure line of the same hue on each side of its anterior extremity; the sexual organs have a thin, longitudinal septum in the middle, a small process connected with their posterior margin, which is directed backwards, and their colour, with that of the branchial opercula, is yellowish-brown. The medial, dentated band, is much less perfectly defined in some individuals than in others.

The form of the male is slighter than that of the female, and its colour is darker, the dentated band in the medial line of the upper part of the abdomen being rather more obscure. The cubital and radial joints of the palpi are short, and the latter, which is the stronger, is somewhat produced at its extremity, on the inner side; the digital joint is of an irregular oval figure, having a slender, curved process at its base, on the outer side, and a large lobe near its extremity, on the inner side; it is convex and hairy externally, concave within, comprising the palpal organs; these organs are very highly developed, prominent, complicated in structure, with two strong, curved spines at their extremity, one of which describes a circle and comprises within its circumvolution some light-coloured membrane and the recurved point of the other spine; they are of a dark-brown hue tinged with red. The convex sides of the digital joints are directed towards each other.

Both sexes of this spider, in a state of maturity, were discovered by Mr. R. H. Meade, in the summer of 1852, on the fronds of the male shield-fern, in Nab Wood, near Bingley, in Yorkshire; and in the autumn of the same year, an adult female was transmitted to him by Mr. F. Walker, who took it at Southgate.

LINYPHIA ALACRIS. Pl. XVII, fig. 157.

Linyphia alacris, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi,
p. 20.

— — Blackw., Ibid., p. 119.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{14}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{11}{16}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The eyes are seated on black spots; the four intermediate ones describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a tubercle and are nearly contiguous; the anterior eyes of the trapezoid are seated on a small protuberance, and are much the least of the eight. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are powerful, conical, rather divergent at the extremity, armed with teeth on the inner surface, and inclined towards the sternum; the legs are long and slender, and are provided with hairs and a few fine spines. These parts, with the palpi, are of a pale yellowish-brown colour, the lateral margins of the cephalo-thorax being darkish. The maxillæ are straight, with the exterior angle, at the extremity, curvilinear; the lip is semicircular and prominent at its apex; and the sternum is broad, convex, glossy, and heart-shaped. These parts have a dark-brown hue, the maxillæ being the palest. The first pair of legs is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The abdomen is oviform, pointed at the spinners, thinly clothed with hairs, glossy, convex above, and projects over the base of the cephalo-thorax; the upper part is of a yellowish-brown colour, mottled with dull white; a narrow, dentated, black band extends along the middle, whose continuity is frequently interrupted, or broken into black spots, about one third of its length above the spinners, and from these spots fine, oblique lines of the same hue pass to the sides, which, with the under part, have a brown-black tint; a yellowish-brown band, mottled with dull white, extends along each side, and the two unite above the anus; the sexual organs are highly developed and very prominent; there is a process connected with their anterior margin which is enlarged at its extremity and curved downwards, and a minute one occurs on the inferior margin; their colour is brown faintly tinged with red. Some individuals have the medial, dentated band much more perfectly defined than others.

In their colours and in the design formed by them the sexes closely resemble each other, but the male is rather smaller than the female, and the anterior part of its cephalo-thorax, where the eyes are seated, is provided with porrect hairs. The humeral joint of its palpi is moderately long; the cubital joint is short, and has a long bristle projecting from its extremity, in front; the radial, which is larger than the cubital joint, has a long bristle projecting from its base, in front, and is gibbous underneath; the digital joint is somewhat oval, having two lobes on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs; they are highly developed, prominent, complex with projecting points and processes, one of the latter, situated near the middle, and another on the inner side, which is slightly bifid at its extremity, being the most conspicuous; their colour is red-brown.

Mr. R. H. Meade found specimens of this *Linyphia* in May, 1852, on the fronds of the male shield-fern, in a wood near Bingley, and in the neighbourhood of Bradford, in Yorkshire.

LINYPHIA NASATA. Pl. XVII, fig. 158.

Æobatus nasatus, Templeton, MS. History of Irish Arachnida.

Length of the female, $\frac{1}{12}$ th of an inch

The cephalo-thorax is obcordate or subtriangular, with a nasiform process in the middle of the frontal margin, caused by a deep notch on each side of it; it is of a pale-brown colour, the sides, which are suddenly depressed, having a darkish-green tint; underneath it has a dark-brown hue. The abdomen is tumid, and of a pale yellowish-brown colour, with a row of obsolete, brown maculæ on each side of the medial line of the upper part; these maculæ are separated anteriorly by a lance-shaped, longitudinal, pale fascia; the spinners are prominent. The legs are long, slender, hairy, spiny, and of a pale-brown colour, with black tarsi.

In the grove at Cranmore this species is not uncommon.

LINYPHIA ERICÆA. Pl. XVII, fig. 159.

Linyphia ericæa, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 22.

— — Blackw., Ibid., p. 119.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{34}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{3}{20}$ ths.

The eyes are seated on black spots; the four intermediate ones describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a small tubercle and are almost contiguous; the anterior eyes of the trapezoid are seated on a slight protuberance, and are much the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are conical, vertical, somewhat divergent at the extremity, and armed with teeth on the inner surface; the maxillæ have the exterior angle, at their extremity, curvilinear, and are slightly inclined towards the lip, which is semicircular and prominent at the apex; the sternum is convex and heart-shaped; and the legs and palpi, which are provided with hairs and fine spines, are long and slender. These parts have a yellowish-brown colour, with the exception of the sternum and base of the lip, which have a browner hue. The first pair of legs is the longest, then the second pair, which a little surpasses the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The abdomen is oviform, glossy, sparingly clothed with hairs, pointed at the spinners, convex above, and projects over the base of the cephalo-thorax; it is of a pale yellow-brown colour, with obscure spots of a deeper shade, the under part being the darkest; the sexual organs are of a red-brown hue and have in connexion

with them four prominent, contiguous processes directed obliquely downwards and backwards, the posterior one being the shortest.

The male is much smaller than the female, but it closely resembles her in colour. The cubital and radial joints of its palpi are short, the latter being the larger; the digital joint is oval, with a small lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complex in structure, with a small, crescent-shaped process near their base, on the outer side, whose superior limb is terminated by an acute point which is almost in contact with the extremity of the radial joint; these organs are of a red-brown colour.

Specimens of this small species of *Linyphia* have been found in moss growing among heath in woods about Oakland, and at the roots of heath on Bingley Moor, in Yorkshire. Two adult males and an immature female, captured in the latter locality, were received from Mr. R. H. Meade in October, 1852.

LINYPHIA INSIGNIS. Pl. XVII, fig. 160.

Linyphia insignis, Blackw., Linn. Trans., vol. xviii, p. 662.

— — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 499.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 18.

Length of the female, $\frac{3}{20}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{5}{16}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides converging towards a large indentation in the medial line; its colour is yellowish-brown, the margins being the darkest. The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a small tubercle and are nearly contiguous; the posterior eyes of the trapezoid are rather the largest, and the anterior ones the smallest of the eight. The falces are powerful, conical, vertical, and armed with a few teeth on the inner surface; and the maxillæ are straight, and somewhat quadrate. These organs resemble the cephalo-thorax in colour, but are rather darker. The lip is semicircular and prominent at its apex; and the sternum is heart-shaped. These parts have a dark-brown tint, the lip being paler at the extremity. The legs are long, slender, provided with hairs and fine, erect spines, and are of a pale yellowish-brown hue; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, glossy, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; it is of a dull-yellowish colour, with a series of black, angular lines, whose vertices are directed forwards, extending along the middle of the upper part, and an irregular, longitudinal band of the same hue on each side; there is a black spot above the

outer margin of each branchial operculum, and several similar ones, more or less confluent, occur about the spinners; a very long, subcylindrical process of a red-brown colour, notched at the extremity, and provided with long hairs on the inferior surface, is directed backwards from the sexual organs, with the anterior margin of which it is connected; the branchial opercula have a pale-yellow tint. The black marks on this species are liable to vary both in form and number, some individuals being entirely without the series of angular lines on the upper part of the abdomen.

The male is smaller and darker coloured than the female. Its cephalo-thorax has a brown hue, and its legs, palpi, falces, and maxillæ are tinged with red. The radial joint of the palpi is larger than the cubital, and has a prominent, conical process near its base, on the outer side, at the extremity of which there are two long bristles; the digital joint is somewhat oval, with a large lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, prominent, complicated in structure, with a black, pointed process at their base, on the outer side, a large scale-like process curved round their inner side and base, which terminates at a prominent, membraneous process on the outer side, and a curved, filiform, black spine on the inner side, whose point is directed downwards; their predominant colour is red-brown.

In the autumn of 1837 an adult female of this species was received from Mr. John Parry, who captured it at Trafford, near Manchester; and in the years 1851 and 1852 Mr. R. H. Meade found both sexes on the fronds of the male shield-fern, *Lastrea filixmas*, growing in woods about Bradford, in Yorkshire, in which district it is very common ('Zoologist,' vol. x, p. 3678). This spider is of such rare occurrence in the vicinity of Llanrwst, that a single adult male is the only specimen of it which has been obtained in that locality during a period of twenty years, and it was taken in an outbuilding in the winter of 1852. Both sexes, in a state of maturity, were received in 1858 from Mr. J. Hardy, who took them in Berwickshire.

LINYPHIA PERNIX.

Linyphia pernix, Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 98.

— — Blackw., Ibid., vol. xi, p. 120.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{7}$ th.

The falces are long, powerful, sub-conical, with a protuberance at the base, in front, and a few teeth on the inner surface; they are inclined towards the sternum, and are of a reddish-brown colour. The maxillæ are rather darker coloured than the falces, straight, and somewhat enlarged at the extremity, which is curvilinear at its exterior angle. The lip is semi-circular, prominent at the apex, and, like the sternum, which is heart-shaped, of a very dark-brown hue. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line, and some coarse hairs, directed forwards, behind the eyes; its colour is dark-brown.

The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a tubercle, and are nearly contiguous; the anterior eyes of the trapezoid are the smallest of the eight. The legs are long, slender, provided with hairs and spines, and of a red colour; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi are short, and resemble the legs in colour, with the exception of the digital joint, which has a dark-brown tint; the radial joint is stronger than the cubital, and has some long hairs in front; the digital joint is somewhat oval, with a large lobe on the outer side, near its base; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a broad, compressed, curved process projecting nearly at right angles from their base, on the outer side, and are of a dark, reddish-brown colour. The abdomen is oviform, very sparingly supplied with short hairs, convex above, projecting over the base of the cephalo-thorax; it is of a yellowish-brown colour on the upper part and sides, a series of black, angular lines, whose indistinct vertices are directed forwards, extending along the middle of the former; the extremities of the anterior lines of the series are much the most strongly marked, and a small, yellowish-white spot occurs immediately above the spinners; the under part is of a pale brown colour.

Mr. F. Walker took this species in May, 1850, among juniper bushes at Southgate.

LINYPHIA NIGELLA.

Linyphia nigella, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 487.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 18.

Length of the male, $\frac{1}{8}$ th, of an inch; length of cephalo-thorax, $\frac{1}{18}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{11}{48}$ ths; length of a leg of the third pair, $\frac{1}{6}$ th.

The four intermediate eyes form a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a small tubercle, and are contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones are much the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line, and is of a dark-brown colour, approaching to black. The falces are long, powerful, armed with teeth on the inner surface, divergent at the extremity, of a deep-brown colour tinged with red, and incline towards the sternum, which is heart-shaped, and of a brownish-black hue. The maxillæ are strong, and have the exterior angle, at their extremity, curvilinear; they resemble the falces in colour, and incline a little towards the lip, which is semicircular, prominent at the apex, and has a brownish-black tint. The legs are long, slender, provided

with hairs and a few spines, and of a pale yellowish-brown hue, the thighs having a tinge of red; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The cubital and radial joints of the palpi are short, the latter, which is much the stronger, being produced at the extremity, on the inner side; the digital joint has an irregular oval form; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a small projection at the upper part, in front, and a large spine which originates at the upper part and extends to the termination of the joint, where it is curved into a circular form, the extremity projecting a little; the colour of these organs is dark, reddish-brown. The convex sides of the digital joints are directed towards each other. The abdomen is oviform, convex above, and projects over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; and the colour of the branchial opercula is pale, yellowish-brown. Some individuals have a series of obscure, angular lines of a yellowish-brown colour, whose vertices are directed forwards, extending along the middle of the upper part.

Specimens of *Linyphia nigella* were found under fragments of rock in woods at Oakland in September, 1835; they were all males, and had the palpal organs completely developed.

LINYPHIA ALBULA. Pl. XVII, fig. 161.

Linyphia albula, Camb., Annals and Mag. of Nat. Hist., third series, vol. vii, p. 435.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{3}{10}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is oval, convex, glossy, and of a pale, brownish-yellow colour, with several obscure, brownish lines in the cephalic region, which meet in an angle at a small indentation in the medial line, and obscure rays of the same hue on the sides, which converge towards the same point. The eyes are small, and are seated on black spots on the anterior part of the cephalo-thorax; the four intermediate ones form a trapezoid whose shortest side is before; the eyes of each lateral pair are placed obliquely on a small tubercle, and are contiguous, and the anterior eyes of the trapezoid are the smallest of the eight. The falces are powerful, conical, armed with a few teeth on the inner surface, and somewhat inclined towards the sternum; and the maxillæ are strong, straight, and have the exterior angle, at the extremity, curvilinear. These organs have a deeper tinge of brown than the cephalo-thorax. The lip is semicircular and prominent at the apex; and the sternum is heart-shaped. The colour of these parts is brown, the lip and margins of the sternum being the darkest. The legs are long, slender, provided with hairs and a few fine spines, and are of a pale, brownish-yellow hue, the femora being much the palest; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is slender, oviform, thinly

clothed with hairs, convex above, and projects over the base of the cephalo-thorax; it is of a yellowish-white colour, the under part being rather the darkest; a fine, brown band, which tapers to the spinners, extends along the middle of the upper part; the anterior half of this band is slightly ramified, and on each side of the posterior part there are three small, brown spots, disposed in pairs; the anterior pair is more distant from the intermediate and posterior pairs than these are from each other; on each side of the under part there is a faint, curved, brown line, and these lines meet near the spinners; the sexual organs are rather prominent, of a dark, reddish-brown colour, and have a small, oval, brownish-yellow process connected with their inferior margin.

The Rev. O. P. Cambridge captured an adult female of this species at Hursley, near Winchester, in the summer of 1860.

LINYPHIA PULCHELLA.

Linyphia pulchella, Blackw., Annals and Mag. of Nat. Hist., vol. xviii, p. 301.

— — Blackw., Ibid., second series, vol. ix, p. 19.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{5}{24}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is slightly compressed and prominent before, rounded on the sides, convex, glossy, with an indentation in the medial line, and is of a yellowish-brown colour. The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are almost contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones are the smallest of the eight. The falces are powerful, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are enlarged where the palpi are inserted, the exterior angle, at their extremity, is curvilinear, and they are inclined a little towards the lip, which is semicircular and prominent at the apex. These parts have a reddish-brown hue, the lip being the darkest. The legs are moderately long, provided with hairs and slender spines, and have a yellowish-brown tint; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour; the cubital and radial joints are short, the latter being much the stronger; the digital joint is oval, with a lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, very complicated in structure, and of a red-brown colour. The abdomen is oviform, glossy, sparingly clothed with hairs, convex above, and projects over the base of the cephalo-thorax; the upper part is of a yellowish-white colour, with a series of obscure, dark, angular lines, whose vertices are directed forwards, extending along the middle, those on its anterior half being the least conspicuous; the sides and under part have a pale, yellowish-brown tint; the

branchial opercula are of a dark, yellowish-brown colour, and between them there is a prominent, transverse fold.

An adult male of this *Linyphia* was discovered among grass in a pasture at Oakland in September, 1845.

LINYPHIA FURVA.

Linyphia furva, Blackw., Linn. Trans., vol. xviii, p. 663.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 19.

Length of the female, $\frac{1}{5}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{5}{24}$ ths; length of a leg of the third pair, $\frac{1}{7}$ th.

The cephalo-thorax is somewhat oval, slightly compressed before, rounded on the sides, convex and glossy, with an indentation in the medial line; the falces are long, powerful, conical, divergent at the extremity, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are strong, straight, convex underneath, and somewhat quadrate, with the exterior angle, at the extremity, curvilinear; the lip is semicircular and prominent at the apex. These parts have a very dark-brown hue, approaching to black, the falces and maxillæ being the palest. The legs and palpi are long, slender, provided with hairs and erect spines, and of a yellowish-brown colour, the latter being the darker. The first pair of legs is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The four intermediate eyes form a trapezoid whose anterior side is the shortest, and those of each lateral pair are almost contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones the smallest of the eight. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black colour; a small, prominent, cylindrical process is connected with the posterior margin of the sexual organs; and the branchial opercula have a brown tint.

The male is rather smaller than the female, but it does not differ from her materially in colour. The cubital and radial joints of its palpi are short, the latter, which is much the stronger, being produced on the inner side; the digital joint is somewhat oval, with a prominent lobe on the inner side, near its extremity; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with two contiguous, black, spiral spines, enveloped in delicate membrane, at their extremity, and are of a dark, reddish-brown colour.

In May, 1838, both sexes of this spider were detected under stones in a moist pasture at Oakland.

LINYPHIA OBSCURA. Pl. XVII, fig. 162.

Linyphia obscura, Blackw., Linn. Trans., vol. xviii, p. 665.

— — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 499.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 19.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The four intermediate eyes form a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a tubercle, and are contiguous; the posterior eyes of the trapezoid are much the largest, and the anterior ones are the smallest of the eight. The cephalo-thorax is convex, glossy, compressed before and rounded on the sides, which are marked with slight furrows converging towards an indentation in the medial line; the falces are conical, armed with a few teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are strong, gibbous underneath, pointed at the extremity, on the inner side, and encompass the lip, which is semicircular and prominent at the apex. These parts are of a dark-brown colour, the cephalo-thorax, which is the darkest, being almost black, and the maxillæ are the palest. The legs are long, provided with hairs and erect spines, and of a yellowish-brown hue, slightly tinged with red; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, with the exception of the digital joint, which has a dark-brown tint; the cubital and radial joints are short, a long, slender bristle being connected with the extremity of the former, in front; the digital joint is somewhat oval, with a projection on the outer side, and a conical, slightly curved, acute process, directed upwards, at its base; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, and very complicated in structure, having on the outer side of the upper part a curved, corneous process, bifid at its extremity, an obtuse, glossy protuberance lower down, and a long, acute spine directed downwards and outwards; they are of a dark, red-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; and the colour of the branchial opercula is dark-brown.

Males of this spider, having the palpal organs fully developed, were taken in June, 1836, on rails at Oakland.

Some individuals have a series of obscure, transverse, slightly curved lines on the upper part of the abdomen, an oblique spot on each side of its anterior extremity, and a line extending along each side of a yellowish-white colour. An adult male, captured by Mr. Wintle, near Gloucester, in 1860, and received from the Rev. O. P. Cambridge in the autumn of the same year, had its abdomen marked with yellowish-white lines and spots.

LINYPHIA GRACILIS. Pl. XVII, fig. 163.

Linyphia gracilis, Blackw., Linn. Trans., vol. xviii, p. 666.

— — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 499.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 19.

Length of the male, $\frac{1}{18}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The cephalo-thorax is convex, glossy, compressed before and rounded on the sides, which are marked with furrows converging towards an indentation in the medial line. The falces are moderately powerful, conical, armed with a few teeth on the inner surface, and inclined towards the sternum, which is heart-shaped, convex, glossy, and provided with some scattered hairs. The maxillæ are strong, enlarged at the base, where the palpi are inserted, and slightly inclined towards the lip, which is semicircular, and prominent at the apex. The colour of the cephalo-thorax, sternum, and lip is brown-black, and that of the falces and maxillæ brown, faintly tinged with red. The four intermediate eyes form a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a tubercle, and are contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones much the smallest of the eight. The legs are long, slender, provided with hairs and erect spines, and of a pale-brown colour tinged with red; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are short, and resemble the legs in colour, with the exception of the digital joint, which is darker; the radial joint is much stronger than the cubital; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a small, glossy protuberance on the outer side, near the base, and a fine spine at the extremity, enveloped in delicate membrane, and curved into a circular form; they are of a red-brown colour. The convex sides of the digital joints are directed towards each other. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; and the colour of the branchial opercula is dull-brown. Some individuals have a series of obscure, angular lines of a brownish hue, whose vertices are directed forwards, extending along the middle of the upper part of the abdomen.

Mature males of *Linyphia gracilis* were found on rails near Crumpsall Hall in November, 1836.

LINYPHIA TENELLA. Pl. XVII, fig. 164.

Linyphia tenella, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xiii, p. 177.

— — Blackw., Ibid., vol. xiv, p. 31.

Length of the female, $\frac{1}{11}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are conical, vertical, and armed with minute teeth on the inner surface; the maxillæ are straight, with the exterior angle, at the extremity, curvilinear. These parts have a brown tint, with the exception of the lateral margins of the cephalo-thorax, which are black. The lip is semicircular and prominent at the apex; and the sternum is convex, glossy, and heart-shaped. Both these parts have a very dark-brown hue. The eyes are seated on black spots; those of each lateral pair are placed obliquely on a small tubercle, and are contiguous, and the anterior eyes of the four intermediate ones forming the trapezoid are seated on a slight protuberance, and are the smallest and darkest of the eight. The legs are long, slender, provided with hairs and fine spines, and have a light, yellowish-red tint; the first pair is the longest, the second pair slightly surpasses the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, pointed at the spinners, sparingly supplied with short hairs, glossy, convex above, and projects over the base of the cephalo-thorax; it is of a dull, olive-green hue, the under part being the darkest, and along the middle of the upper part there extends a very obscure series of angular lines of a deeper shade, having their vertices directed forwards; the sexual organs present two parallel, convex, glossy prominences of a red-brown colour.

An adult female of this *Linyphia* was received from Mr. R. H. Meade in September, and an immature one from the Rev. Hamlet Clark in October, 1853.

LINYPHIA CIRCUMSPECTA. Pl. XVII, fig. 165.

Linyphia circumspecta, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xiii, p. 177.

— — Blackw., Ibid., vol. xiv, p. 32.

Length of the male, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{36}$ th; length of an anterior leg, $\frac{3}{16}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a minute tubercle, and are contiguous; the posterior eyes of the trapezoid are the largest, and the anterior ones the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides converging towards an indentation in the medial line; the falces are conical, armed with a few small teeth on the inner surface, and somewhat inclined towards the sternum, which is broad and heart-shaped; the maxillæ are enlarged where the palpi are inserted, and slightly inclined towards the lip, which is semicircular, and prominent at the apex. The legs are long, slender, and provided with hairs and fine spines; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. These parts are of a yellowish-brown colour; the sternum, lip, and lateral margins of the cephalo-thorax are the darkest, the legs much the palest, and the falces and maxillæ are faintly tinged with red. The palpi resemble the legs in colour, with the exception of the digital joint, which has a brown hue; the cubital and radial joints are short, the latter being the stronger; the digital joint is oval, with a depressed, curved process at the base, on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, with a black, filiform spine at the extremity, curved in a circular form, and are of a red-brown colour. The convex sides of the digital joints are directed towards each other. The abdomen is oviform, pointed at the spinners, thinly clothed with hairs, glossy, convex above, and projects over the base of the cephalo-thorax; it is of a yellowish-brown colour, the under part being much the darkest; and has an obscure series of dark, angular lines, whose vertices are directed forwards, extending along the middle of the upper part; between the branchial opercula there is a rather prominent, transverse fold.

In the autumn of 1853 males of this species, having their palpal organs fully developed, were discovered among herbage growing in woods about Oakland.

LINYPHIA FLAVIPES. Pl. XVII, fig. 166.

Linyphia flavipes, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xiii, p. 178.

— — Blackw., Ibid., vol. xiv, p. 32.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{36}$ th; length of an anterior leg, $\frac{3}{20}$ ths; length of a leg of the third pair, $\frac{1}{12}$ th.

The legs are long, slender, provided with hairs and fine spines, and of a pale-yellowish colour faintly tinged with brown; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi have a brown-black tint. The cephalo-thorax is oval, convex, glossy, with slight furrows on

the sides converging towards an indentation in the medial line; the falces are conical, armed with a few teeth on the inner surface, and inclined towards the sternum, which is broad, convex, glossy, and heart-shaped; the maxillæ are straight, with the exterior angle at the extremity curvilinear; and the lip is semicircular and prominent at the apex. These parts are of a brownish-black hue, the falces and maxillæ being faintly tinged with red. The four intermediate eyes form a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a tubercle, and are nearly contiguous; the anterior eyes of the trapezoid are placed on a slight protuberance, and are the smallest and darkest of the eight. The abdomen is oviform, glossy, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax, and is of a brownish-black colour, that of the sexual organs being reddish-brown. Some individuals have an obscure series of slightly angular lines of a pale-brown hue, whose vertices are directed forwards, extending along the upper part of the abdomen.

The sexes closely resemble each other in colour, but the legs of the male are longer and have a yellower tint than those of the female. The radial joint of its palpi is stronger than the cubital, and somewhat produced in front; the digital joint is oval, with a lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, protuberant, complicated in structure, with a curved, prominent process near the base, on the outer side, a few very short, pointed ones at the extremity, and are of a red-brown colour. The convex sides of the digital joints are directed towards each other.

Both sexes of *Linyphia flavipes*, in a state of maturity, were found among moss in woods at Oakland, in the summer of 1853; and in the spring of 1854, adult females were taken by the Rev. Hamlet Clark in Norfolk.

Genus NERIËNE (Blackw.).

Eyes disposed on the anterior part of the cephalo-thorax in two transverse rows; the four intermediate ones describe a trapezoid whose shortest side is before, and those of each lateral pair, which are contiguous or nearly so, are placed obliquely on a tubercle.

Maxillæ strong, dilated at the extremity, and inclined or curved towards the lip.

Lip semicircular, or truncated at the extremity.

Legs moderately long and robust; the anterior and posterior pairs, which are the longest, are equal in length or nearly so, and the third pair is the shortest.

NERIÈNE MARGINATA. Pl. XVII, fig. 167.

Neriène marginata, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 188.

— — Blackw., Research. in Zool., p. 363, pl. 3, figs. 6, 7.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 19.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{14}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{3}{16}$ ths.

The legs are provided with erect spines and are of a reddish-brown colour, with annuli of a darker hue; the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a slightly curved claw at their extremity. The cephalo-thorax is long, oval, convex, glossy, somewhat elevated before, where the eyes are seated, and has an indentation in the medial line; the falces are strong, conical, rather divergent at the extremity, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are enlarged at the extremity, and slightly inclined towards the lip, which is semicircular and prominent at the apex. These parts have a brownish-black tint. The two intermediate eyes of the posterior row are the largest of the eight, and with those of the anterior row, which are the smallest, form a trapezoid whose shortest side is before. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; the upper part is of a brownish-black colour, bordered by a dentated band of a pale-brown hue, thickly spotted with white, which passes above the spinners, but whose continuity is interrupted in front by a black bar intersecting it at right angles; a series of curved, angular lines, of a pale-brown colour, minutely spotted with white, extends along the middle; the convex sides of these lines are towards each other, and their vertices are directed forwards; the sides and under part have a brownish-black tint, and are marked with a few white spots, four minute ones, which describe a large quadrangle, occurring on the latter; the sexual organs are prominent; and the colour of the branchial opercula is dark red-brown.

The figure of the male is sligher than that of the female, and its abdomen is more cylindrical; its colours also are darker, the design formed on the abdomen by their distribution being sometimes almost obliterated, a white spot on each side of the upper part of its anterior extremity presenting the only trace of it. Its falces have one tooth on the inner surface much larger than the rest, and there are two protuberances at the base of each, in front, the larger being situated on the inner side and the smaller near the middle. The colour of its palpi is brownish-black, with the exception of the axillary and base of the humeral joint, which have a reddish tint; the axillary joint has a conical process at its extremity, on the under side; the cubital and radial joints are short, and the latter, which is much the stronger,

is fringed with long hairs on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complicated in structure, with a prominent, curved, scale-like process on the inner side, which terminates in a point directed obliquely downwards and outwards, and a spiral spine at their extremity, at whose base there is an expanded, projecting, transparent membrane, slightly fringed at its margin; they are of a brownish-black colour. The legs of old males are frequently of a red hue, without annuli.

This species constructs snares, similar in design to those of the *Linyphiæ*, among grass growing in and near woods in Lancashire, Denbighshire, and Berwickshire. It has also been met with in Devonshire by Miss Ellen Clayton, and Mr. R. H. Meade has captured it in Yorkshire. The sexes arrive at maturity in autumn, and are sometimes abundant in localities suited to their habits. If this spider be compared with *Linyphia marginata* it will immediately be seen how easy the transition is from the genus *Linyphia* to that of *Neriène*.

NERIÈNE BICOLOR. Pl. XVII, fig. 168.

Neriène bicolor, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 344.

— — Blackw., Research. in Zool., p. 366.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 20.

Length of the female, $\frac{1}{3}$ th of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{3}$ th.

The cephalo-thorax is convex, glossy, compressed before and rounded on the sides, with an indentation in the medial line; the falces are robust, conical, vertical, and armed with teeth on the inner surface; the maxillæ are enlarged at the extremity, and slightly inclined towards the lip, which is semicircular and prominent at the apex; the sternum is heart-shaped; the legs are provided with erect spines, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base; the palpi have a curved claw at their extremity. These parts have a red-brown colour, the sternum, lip, maxillæ, and margins of the cephalo-thorax being the darkest, and the eyes are seated on black spots. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue.

The sexes are similar in colour, but the male is rather smaller than the female, and has some slender bristles, curved forwards, on the anterior part of the cephalo-thorax. The cubital and radial joints of its palpi are short; the former has a fine bristle at its extremity, in front, and the latter, which is the stronger, has a small protuberance on the outer side of the upper part fringed with long bristles; the digital joint is somewhat oval, with a large, obtuse process at its base, and a prominent lobe on its outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed,

complicated in structure, with a crescent-shaped process at the upper part, on the outer side, a small, bifid one at the extremity, and are of a dark red-brown colour.

Neriëne bicolor is common in many parts of England, Wales, and Scotland. It appears to prefer well-wooded districts, constructing among grass a snare similar to that of *Neriëne marginata*. Not unfrequently it may be found on rails, or concealed under stones partially imbedded in earth. The male has the palpal organs developed in autumn.

NERIËNE RUFIPES.

Neriëne rufipes, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 345.

— — Blackw., Research. in Zool., p. 368.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 20.

Length of the female, $\frac{3}{10}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{1}{3}$ th; length of a leg of the third pair, $\frac{1}{6}$ th.

The cephalo-thorax is oval, convex, glossy, somewhat depressed and rounded before, and has a small indentation in the medial line; the falces are powerful, conical, provided with teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped; the maxillæ are enlarged at the extremity, and inclined towards the lip, which is semicircular and prominent at the apex; the legs are provided with hairs and a few spines, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base; the palpi have a curved claw at their extremity. These parts are of a light red-brown colour, the falces, sternum, lip, and maxillæ being the darkest, and the eyes are seated on black spots. The abdomen is oviform, moderately convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; and the branchial opercula, which are large, have a yellowish-white tint.

The sexes are similar in colour, but the male is rather the smaller. The humeral joint of its palpi is enlarged at the extremity; the cubital and radial joints are short; the former, which is the larger, has a few long bristles at its extremity, in front, and the latter has an obtuse process on the under side of the upper part; the digital joint is oval, with a small protuberance at its base, on the inner side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complex with spine-like processes, and of a dark red-brown colour.

Specimens of this spider were obtained in 1832, under stones and on rails in the township of Crumpsall. In June the female fabricates several globular cocoons of yellowish-white silk of a slight texture, which she attaches to the inferior surface of stones; the largest of them measures $\frac{1}{6}$ th of an inch in diameter, and contains about fifty spherical eggs of a yellowish-white colour, not adherent among themselves.

NERIËNE LIVIDA. Pl. XVIII, fig. 169.

Neriëne livida, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 486.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 20.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{1}{3}$ th; length of a leg of the third pair, $\frac{1}{7}$ th.

The legs, which are robust, are provided with hairs and fine spines, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and deeply pectinated, and the inferior one is inflected near its base; the palpi have a curved, pectinated claw at their extremity; the cephalo-thorax is oval, convex, glossy, with furrows on the sides converging towards an indentation in the medial line; the falces are powerful, conical, convex in front, near the base, armed with a few small teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped; the maxillæ are strong, convex underneath, and inclined towards the lip, which is semicircular and prominent at the apex. These parts are of a red-brown colour, the lip, maxillæ, falces, and anterior part of the cephalo-thorax being the darkest. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax, and is rather broader at the posterior than at the anterior extremity; it is thinly clothed with hairs, glossy, and of a yellowish-brown colour tinged with black; and the branchial opercula have a pale-yellow hue. After the female has deposited her eggs the abdomen acquires a brown-black tint.

The male is smaller and darker coloured than the female. The humeral joint of its palpi is curved towards the cephalo-thorax; the cubital and radial joints are short, the latter having two obtuse apophyses at its extremity, the larger situated on the outer and the smaller on the inner side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a dark red-brown colour.

This species is plentiful in the valley of the Conway, where it conceals itself under stones; and in December, 1848, an adult male was received from Mr. J. Hardy, who took it in Berwickshire. In July the female spins several globular cocoons of white silk of a slight texture, attaching them to some depression in the stone selected for her retreat; the largest of these cocoons measures $\frac{1}{7}$ th of an inch in diameter, and comprises about thirty spherical eggs of a pale yellowish-white colour, not agglutinated together.

NERIÈNE FURVA.

Neriène furva, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 486.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 20.

Length of the male, $\frac{1}{5}$ th of an inch; length of the cephalo-thorax, $\frac{1}{17}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{7}$ th.

The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides converging towards an indentation in the medial line; the falces are powerful, conical, vertical, convex in front, and armed with teeth on the inner surface; the maxillæ are enlarged at the base, where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex; and the sternum is heart-shaped. These parts are of a dark-brown hue slightly tinged with red, the sternum, lip, and anterior part of the cephalo-thorax being the darkest. The legs, which are robust, have a red tint, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour; the cubital and radial joints are short, the former, which is the stronger, being convex in front; the latter has two apophyses at its extremity; one, situated in front, terminates in a point, and has a small, acute process on the inner side; and the other, which occurs underneath, has a pointed process on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complicated in structure, with a corneous process at the upper part, curved outwards, and are of a dark red-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; and the colour of the branchial opercula is pale yellowish-white.

An adult male of this spider was discovered under a fragment of rock in a wood at Oakland, in June 1835.

NERIÈNE ERRANS. Pl. XVIII, fig. 170.

Neriène errans, Blackw., Linn. Trans., vol. xviii, p. 643.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 20.

Argus — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 511.

Length of the female, $\frac{1}{5}$ th of an inch; length of the cephalo-thorax, $\frac{1}{18}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{3}{16}$ ths; length of a leg of the third pair, $\frac{1}{5}$ th.

The eyes are small. The cephalo-thorax is oval, convex, glossy, with an indentation in

the medial line; the falces are powerful, conical, convex in front, near the base, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are strong, and inclined towards the lip, which is semicircular and prominent at the apex. These parts are of a brown colour, the sternum being the palest, and the falces, maxillæ, and lip having a tinge of red. The legs are long, provided with hairs and a few fine spines, and of a pale red-brown hue; the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, rather convex above, and projects over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish colour faintly tinged with green, and has a series of obscure, angular lines of a pale yellowish-brown hue, whose vertices are directed forwards, extending along the middle of the upper part; the sexual organs have a dark red-brown tint; and the colour of the branchial opercula is dull yellowish-brown.

The male is rather smaller than the female, but it resembles her in colour. The cubital and radial joints of its palpi are short, the latter being much the stronger; the digital joint is somewhat oval, with a large lobe on the outer side, near the upper part; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with several curved, pointed, prominent processes at the extremity, one or two of which are enveloped in delicate membrane, and are of a red-brown colour.

Neriëne errans is not uncommon among grass and on rails in North Wales and in the south of Lancashire.

NERIËNE SYLVATICA.

Neriëne sylvatica, Blackw., Linn. Trans., vol. xviii, p. 644.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 21.

Length of the male, $\frac{1}{9}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{3}$ th; length of a leg of the third pair, $\frac{1}{7}$ th.

The eyes are seated on black spots. The cephalo-thorax is oval, slightly convex, glossy, rather prominent before, where the eyes are situated, and marked with furrows on the sides converging towards a large indentation in the medial line; the falces are moderately strong, conical, provided with a few teeth on the inner surface, and a longitudinal row of exceedingly short, fine spines in front, near the outer side; they are inclined towards the sternum, which is broad and heart-shaped; the maxillæ are very gibbous near the base, and incline towards the lip, which is semicircular and prominent at the apex; the legs are slender, and provided with hairs and fine, erect spines. These parts are of a brown hue; the legs, which are the palest, and the falces, maxillæ, and lip, which are the darkest, have a tinge of red. The anterior and posterior pairs of legs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near

its base. The palpi resemble the legs in colour; the cubital and radial joints are short; the former has a long bristle at its extremity in front, and the latter, which is the stronger, is gibbous underneath at the base; the digital joint is somewhat oval, with a bold, conical protuberance at the upper part in front, and a prominent lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed and complicated in structure; a strong, curved, obtuse process, slightly serrated on its exterior edge, is situated on the outer side of the upper part; another curved process, whose point is enveloped in membrane, extends from the upper part to the extremity of the joint, and within its curvature a small, dentated spine occurs; these organs are of a red-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; and the colour of the branchial opercula is pale-yellow.

Adult males of this species were taken in February, 1837, under detached pieces of rock, slightly imbedded in earth, in woods about Llanrwst.

NERIËNE VIARIA. Pl. XVIII, fig. 171.

Neriëne viaria, Blackw., Linn. Trans., vol. xviii, p. 645.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 21.

Argus viarius, Walck., Hist. Nat. des Insect. Apt., t. iv, p. 512.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{3}{20}$ ths; length of a leg of the third pair, $\frac{1}{9}$ th.

The anterior eyes of the four intermediate ones forming the trapezoid are much the smallest of the eight. The cephalo-thorax is oval, moderately convex, glossy, with slight furrows on the sides, converging towards an indentation in the medial line; the falces are powerful, conical, armed with teeth on the inner surface, rather divergent at the extremity, and inclined towards the sternum, which is broad, convex, and heart-shaped; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex; the legs are provided with hairs and a few slender spines, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. These parts are of a brown colour, the margins of the cephalo-thorax and the lip being the darkest, and the legs and maxillæ the palest. The palpi resemble the legs in colour; the cubital and radial joints are short; the former, which is the stronger, has some long hairs at its extremity in front, and the latter is gibbous underneath at the base; the digital joint is somewhat oval, with a large lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, very prominent, and of a reddish-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a dark-brown hue, approaching to black; and the colour of the branchial opercula is pale, yellowish-brown.

A male of this spider, which had the palpal organs perfectly developed, was found running on a footpath at Oakland in May, 1838.

NERIËNE PULLA.

Neriëne pulla, Blackw., Linn. Trans., vol. xviii, p. 646.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 21.

Argus pullus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 512.

Length of the male, $\frac{1}{11}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{11}$ th.

The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides, converging towards an indentation in the medial line, and its colour is dark-brown. The falces are strong, conical, armed with a few teeth on the inner surface, and somewhat inclined towards the sternum; the maxillæ are powerful, and inclined towards the lip, which is quadrate. These parts have a dark, reddish-brown tint. The sternum is heart-shaped, glossy, and of a brown colour, with very minute spots of a darker hue. The legs have a reddish-brown tint, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are of a red-brown colour, with the exception of the digital joint, which has a dark-brown tint; the humeral joint is curved towards the cephalo-thorax, and the cubital and radial joints are short, the latter having a large process, rounded at its extremity, on the outer and a smaller one on the inner side; the digital joint is oval, hairy and very convex externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a red-brown hue. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, and of a yellowish-brown colour, with numerous minute spots and fine streaks of a deeper shade; and the branchial opercula have a pale-yellow tint.

Males of *Neriëne pulla*, in a state of maturity, were captured in June, 1836, on rails near Llanrwst.

NERIËNE GRACILIS. Pl. XVIII, fig. 172.

Neriëne gracilis, Blackw., Linn. Trans., vol. xviii, p. 646.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 21.

Argus — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 512.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are powerful, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are strong, and inclined towards the lip, which is semicircular and prominent at the apex. These parts are of a brownish-black colour. The legs are slender, provided with hairs and a few fine, erect spines, and have a pale, reddish-brown tint; the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi have a dark-greenish hue. The abdomen is slender, oviform, and projects a little over the base of the cephalo-thorax; it is thinly clothed with hairs, and of a brownish-black colour; and the branchial opercula have a dark-brown tint.

The male closely resembles the female in colour, but its falces and maxillæ are tinged with red, and the former, which are divergent at the extremity, have a small process in front, near the articulation of the fang. The humeral joint of the palpi is curved towards the cephalo-thorax, and has a row of hairs, directed forwards, extending along its upper part; the cubital and radial joints are short; the latter, which is much the stronger, is slightly elongated in front, and has a small, pointed process on the outer side, near its extremity; the digital joint is somewhat oval, having at the upper part a bold prominence, indented on the outer side, and a curved, conical protuberance on the inner side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, prominent, and of a dark, reddish-brown colour.

Both sexes of this species were taken on rails at Crumpsall Hall, near Manchester, and at Capel Garmon, in the parish of Llanrwst, Denbighshire, in the autumn of 1836.

NERIËNE VAGANS. Pl. XVIII, fig. 173.

Neriëne vagans, Blackw., Research. in Zool., p. 374.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 21.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{6}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The anterior eyes of the four intermediate ones forming the trapezoid are very minute and near to each other. The cephalo-thorax is oval, convex, glossy, somewhat depressed before, where the eyes are situated, and has a slight indentation in the medial line; the falces are strong, conical, armed with teeth on the inner surface, and inclined a little towards the sternum, which is convex and heart-shaped; the maxillæ are enlarged at the base, where the palpi are inserted, slightly so at the extremity, and inclined towards the lip, which is semicircular and prominent at the apex. These parts are of a dark-brown colour, the lip being the darkest. The legs have a red-brown tint, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs

in colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a black hue, and the colour of the branchial opercula is yellowish-brown.

The male resembles the female in colour. The humeral joint of its palpi is long; the cubital joint is rather long, clavate, slightly curved downwards, and has a row of hairs, directed forwards, extending along its upper part; the radial joint, which is short and strong, has an obtuse apophysis underneath, and a long one in front, towards the inner side, curved upwards and outwards at its extremity, which is somewhat enlarged and rounded; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; they are moderately developed, with several curved processes at the extremity, and are of a brown-black colour.

This is an æronautic spider, and is very common among the grass of meadows and pastures in North Wales and in Lancashire.

NERIËNE DENTATA. Pl. XVIII, fig. 174.

Theridion dentatum, Wider, Museum Senckenb., Band i, p. 229, taf. 15, fig. 8.

Argus dentatus, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 354.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{18}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The four intermediate eyes form a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a small tubercle, and are almost contiguous; the lateral eyes are the largest, and the two anterior ones of the trapezoid are the smallest and darkest of the eight. The cephalo-thorax is oval, glossy, convex, particularly in the cephalic region, where it is supplied with some long, hoary hairs directed forwards, and has a slight indentation in the medial line; the falces are conical, armed with teeth on the inner surface, and a prominent, pointed process in front, near the middle, towards the inner side; they have numerous, minute, pointed protuberances in front and on the outer side, and are slightly inclined towards the sternum, which is broad and heart-shaped; the maxillæ are enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex. These parts have a dark-brown colour, the falces and maxillæ, which are the palest, being tinged with red. The legs have a pale, brownish-yellow tint; they are provided with hairs and a few fine spines, and the anterior and posterior pairs are equal in length; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour; the cubital joint is strong and clavate, and projects a short, conical apophysis from its extremity on the outer side; the radial joint is somewhat produced at its extremity on the inner side, and has a long, curved apophysis on the outer side, which terminates in a point in front of the digital joint; this last joint is oval, convex and hairy externally, concave within, comprising the palpal

organs, which are highly developed, very prominent, and complicated in structure, having a large, scale-like process on the outer side, extending beyond the end of the joint, and a filiform, curved, black spine on the inner side, which passes under the radial apophysis and along the margin of the scale-like process to its point; the colour of these organs is reddish and yellowish-brown intermixed. The abdomen is oviform, hairy, convex above, projecting over the base of the cephalo-thorax, and has a brownish-black hue; that of the branchial opercula being dull-yellow.

According to M. Wider, the female is without the prominent, pointed process near the middle of each falx, in front; it may also be distinguished from the male by the sexual organs and the structure of the palpi.

Early in May, 1854, adult males of this species, which has all the characteristics of a *Neriëne*, were taken by the Rev. Hamlet Clark in Norfolk.

NERIËNE AFFINIS. Pl. XVIII, fig. 175.

Neriëne affinis, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xvi, p. 121.

Length of the male, $\frac{1}{7}$ th of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of a posterior leg, $\frac{11}{48}$ ths; length of a leg of the third pair, $\frac{3}{16}$ ths.

The legs are provided with hairs, and have a bright, yellowish-red tint; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are long, and resemble the legs in colour, but are somewhat paler; the humeral joint is slightly curved towards the cephalo-thorax, and the cubital and radial joints are clavate, the former having a conical, pointed process projecting at right angles from its extremity on the under side, and the latter a very minute, bifid, black apophysis at its extremity in front; the digital joint is small, oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, not very complicated in structure, and of a pale, red-brown colour. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides, converging towards an indentation in the medial line; the falces are powerful, subconical, vertical, convex at the base in front, divergent at the extremity, armed with teeth on the inner surface, and have a conical, tooth-like process near the middle, towards the inner side, and numerous minute, pointed prominences in front; the maxillæ are convex at the base, enlarged where the palpi are inserted, and at the extremity, which has a pointed process on the outer side, and incline towards the lip, which is semicircular and prominent at the apex; and the sternum is broad, glossy, and heart-shaped. These parts have a reddish-brown colour, the lip and anterior part of the cephalo-thorax being much the darkest. The four intermediate eyes form a trapezoid, the two anterior ones, which constitute its shortest side, being the smallest and darkest of the eight, and those of each

lateral pair are seated obliquely on a small tubercle, and are almost in contact. The abdomen is oviform, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; it has a dark-olive hue, the under part being the palest, and the colour of the branchial opercula is yellow; along the middle of the upper part there extends a series of obscure, curved, grayish lines, whose convexity is directed forwards; and two indentations occur on each side of the medial line, the posterior pair being rather the wider apart.

Two adult males of this species were received from Mr. R. H. Meade, in June, 1855, one of which had been taken in the vicinity of Burton-on-Trent and the other at Hornsea, near the east coast of Yorkshire, in the preceding year.

NERIËNE HUTHWAITII. Pl. XVIII, fig. 176.

Neriëne Huthwaitii, Camb., Annals and Mag. of Nat. Hist., third series, vol. vii, p. 436.

Length of the male, $\frac{3}{20}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{5}{24}$ ths; length of a leg of the third pair, $\frac{3}{16}$ ths.

The legs, which are moderately long and provided with hairs, have a brownish-yellow hue; the first and fourth pairs are the longest and equal in length, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour; the radial is much longer than the cubital joint, and clavate; the digital joint is small, oval, convex and hairy externally, concave within, comprising the palpal organs, which are neither highly developed nor very complicated in structure; they have a straight, black spine at their extremity, and are of a yellowish-brown colour. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides, converging towards an indentation in the medial line; the falces are long, powerful, conical, vertical, convex in front near the base, divergent at the extremity, and armed with teeth on the inner surface; the maxillæ are obliquely truncated at the extremity on the outer side, and inclined towards the lip. These parts are of a yellowish-brown colour, the falces being the darkest, the maxillæ the palest, and the narrow, lateral margins of the cephalo-thorax having a brown hue. The lip is semi-circular and prominent at the apex; and the sternum is broad, glossy, and heart-shaped. These parts are of a dark-brown colour. The eyes are seated on black spots on the anterior part of the cephalo-thorax; the four intermediate ones form a trapezoid, the two anterior ones, which are the smallest and darkest of the eight, constituting its shortest side; the eyes of each lateral pair are placed obliquely on a small tubercle, and are contiguous. The abdomen is oviform, hairy, moderately convex above, and projects a little over the base of the cephalo-thorax; it is of a dark, greenish-brown colour, that of the branchial opercula being dull-yellow.

An adult male of this species, received from the Rev. O. P. Cambridge in the autumn of 1860, was taken in the summer of the same year at Calke Abbey, in Derbyshire, by Mr. Huthwaite.

NERIËNE PYGMÆA. Pl. XVIII, fig. 177.

Neriëne pygmæa, Blackw., Research. in Zool., p. 376.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 21.

Length of the female, $\frac{1}{11}$ th of an inch; length of the cephalo-thorax, $\frac{1}{30}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{25}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The legs have a bright-rufous tint; they are provided with hairs and fine spines, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The cephalo-thorax is oval, convex, glossy, somewhat depressed on the sides, and has a small indentation in the medial line. The falces are strong, conical, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped. The maxillæ are enlarged at the extremity, and inclined towards the lip, which is semicircular and prominent at the apex. The cephalo-thorax, sternum, and lip, have a brown colour, that of the falces and maxillæ being dark, reddish-brown. The abdomen is oviform, projecting a little over the base of the cephalo-thorax; it is sparingly clothed with hairs, glossy, and of a brownish-black hue; and the colour of the branchial opercula is brown.

The sexes are similar in colour, but the male may easily be distinguished from the female by its palpi. The cubital and radial joints are short, the latter, which is much the stronger, being prominent in front; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a dark, reddish-brown colour.

Neriëne pygmæa is plentiful among the grass of old pastures in Lancashire and North Wales, and may frequently be seen running on rails and on footpaths.

NERIËNE LUGUBRIS,

Neriëne lugubris, Blackw., Research. in Zool., p. 380.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 21.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{25}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{11}$ th.

The palpi have a brown-black hue; the cubital and radial joints are short, the latter, which is much the stronger, having an obtuse apophysis underneath, and a larger one in front,

curved outwards, and somewhat pointed at its extremity; the digital joint is oval, and has a bold protuberance near its base on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a strong process curved downwards from the outer side of the upper part, and are of a reddish-brown colour. The convex sides of the digital joints are directed towards each other. The cephalo-thorax is oval, convex, glossy, rather prominent before, where the eyes are situated, depressed on the sides, and has an indentation in the medial line; the falces are strong, conical, armed with small teeth on the inner surface, and inclined towards the sternum, which is convex and heart-shaped; the maxillæ are robust, and inclined towards the lip, which is semicircular, and prominent at the apex. These parts are of a brownish-black colour. The legs have a red-brown tint, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, and has a black hue, with the exception of the branchial opercula, which are of a dark-brown colour.

In June, 1834, adult males of this species were captured on iron rails at Crumpsall Hall.

NERIËNE SAXATILIS.

Neriëne saxatilis, Blackw., Annals and Mag. of Nat. Hist., vol. xiii, p. 183.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 22.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{28}$ th; length of an anterior leg, $\frac{1}{7}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex; the legs are slender, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. These parts, with the palpi, are of a brown colour, the sternum and lip being the darkest, and the legs much the palest. The radial joint of the palpi is larger than the cubital, and projects from its extremity in front a pointed apophysis, which is curved outwards; the digital joint is somewhat oval, with a bold protuberance at its base, which is deeply indented on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complicated in structure, and of a reddish-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; that of the branchial opercula being brown.

A male of this *Neriëne*, having the palpal organs fully developed, was discovered among loose fragments of rock in a wood at Hendre House, near Llanrwst, in June, 1841.

NERIËNE AVIDA.

Neriëne avida, Blackw., Annals and Mag. of Nat. Hist., vol. xiii, p. 185.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 22.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{32}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{32}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The anterior eyes of the four intermediate ones forming the trapezoid are the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with a small indentation in the medial line; the falces are powerful, conical, rather divergent at the extremity, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are strong, enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex; the legs are provided with hairs, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. These parts, with the palpi, have a brown hue; the legs and palpi, which are the palest, and the falces, maxillæ, and extremity of the lip, having a tinge of red. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black colour; an obtuse process is connected with the anterior margin of the sexual organs; and the branchial opercula have a yellowish-brown tint.

The male is rather smaller than the female, but it resembles her in colour. The anterior part of its cephalo-thorax is somewhat gibbous, and immediately behind each lateral pair of eyes there is a small indentation. The radial joint of the palpi is larger than the cubital, and projects a pointed apophysis from its extremity, in front; the digital joint is somewhat oval; its base is slender and curved outwards, and there is a lobe near the middle of its outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a bold projection near the base, on the inner side, and a long, black, convoluted, filiform spine, enveloped in membrane, extending from the upper part beyond their extremity; they are of a reddish-brown colour.

Males and females of this spider were found on rails at Oakland in April, 1839.

NERIËNE TIMIDA.

Neriëne timida, Blackw., Annals and Mag. of Nat. Hist., vol. xiii, p. 183.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 22.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The legs have a pale, reddish-brown tint, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The cephalo-thorax is oval, convex, glossy, depressed on the sides, and has a small indentation in the medial line; the falces are powerful, conical, rather divergent at the extremity, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are strong, enlarged where the palpi are inserted and at the extremity, and inclined towards the lip, which is semicircular and prominent at the apex. These parts have a very dark-brown colour. The anterior eyes of the four intermediate ones forming the trapezoid are the smallest of the eight. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a black hue, that of the branchial opercula being dark-brown.

The sexes are similar in colour, but the male is rather the smaller. The cubital and radial joints of its palpi are short, the latter being much the stronger; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, complicated in structure, with a short, prominent spine, enveloped in membrane at their extremity, and are of a dark, reddish-brown colour.

Both sexes of this species were taken on rails at Oakland in April, 1841.

NERIËNE FLAVIPES. Pl. XVIII, fig. 178.

Neriëne flavipes, Blackw., Annals and Mag. of Nat. Hist., vol. xiii, p. 182.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 22.

Length of the male, $\frac{1}{12}$ th of an inch, length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{32}$ nd; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The four intermediate eyes form a trapezoid, whose anterior side is rather the shortest; the two posterior ones are the largest, and the two anterior ones the smallest, of the eight. The cephalo-thorax is oval, convex, glossy, with a slight indentation in the medial line; the falces are powerful, conical, divergent at the extremity, armed with a few minute teeth on the inner surface, and inclined towards the sternum, which is convex and heart-shaped; the maxillæ are strong, enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex; the abdomen is oviform, sparingly clothed with hairs, convex above, projecting over the base of the cephalo-thorax. These parts have a black hue. The legs have a dull-yellowish tint, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi have a brownish-

black hue; the cubital and radial joints are short, the latter being much the stronger; the digital joint is somewhat oval, with a bold, conical prominence in front, and a small one at the base, on the inner side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a dark, reddish-brown colour.

In February, 1841, adult males of *Neriëne flavipes* were captured on rails at Oakland.

NERIËNE PARVA. Pl. XVIII, fig. 179.

Neriëne parva, Blackw., Linn. Trans., vol. xviii, p. 647.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 22.

Argus minimus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 512.

Length of the male, $\frac{1}{50}$ th of an inch; length of the cephalo-thorax, $\frac{1}{30}$ th, breadth, $\frac{1}{40}$ th; breadth of the abdomen, $\frac{1}{40}$ th; length of an anterior leg, $\frac{1}{13}$ th; length of a leg of the third pair, $\frac{1}{16}$ th.

The cephalo-thorax is slightly compressed before, rounded on the sides, convex, glossy, with an indentation in the medial line; the falces are conical, armed with teeth on the inner surface, and a tooth-like process in front, near the extremity; they are inclined towards the sternum, which is broad and heart-shaped; the maxillæ are strong, and inclined towards the lip, which is semicircular and prominent at the apex; the legs are provided with hairs, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. These parts are of a brown colour, the falces and lip being the darkest. The palpi have a brown hue, the radial joint being much the darkest; the cubital and radial joints are short; the latter is produced in front, very prominent, and pointed, with a large process near its base, on the inner side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a prominent process at the upper part, on the outer side, one or two small, pointed ones at the extremity, and are of a red-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a dark-brown colour; that of the branchial opercula being pale-yellow.

Specimens of this very minute spider were detected on rails at Oakland in January, 1837; they were all males, and had the palpal organs perfectly developed.

NERIËNE MUNDA. Pl. XVIII, fig. 180.

Neriëne munda, Blackw., Linn. Trans., vol. xviii, p. 642.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 268.

Argus mundus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 511.

Length of the male, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{18}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{6}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The anterior eyes of the four intermediate ones forming the trapezoid are the smallest of the eight. The cephalo-thorax is oval, convex, glossy, with a slight indentation in the medial line; the falces are strong, conical, vertical, armed with teeth on the inner surface, and have a small, conical process towards the inner side of the extremity, in front; the maxillæ are powerful, greatly enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex; the sternum is broad and heart-shaped. These parts are of a reddish-brown colour, the falces and maxillæ being the reddest. The legs have a pale-red hue, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, with the exception of the digital joint, which has a reddish-brown tint; the cubital and radial joints are short; the former is very strong and convex in front, and the latter projects three apophyses from its extremity; the largest is situated on the outer side, the next on the inner side, and the smallest underneath; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a reddish-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue, the colour of the branchial opercula being yellowish-white. Some individuals have the abdomen of a yellowish-brown hue.

The female is rather larger than the male. The anterior part of its cephalo-thorax is tinged with brown, and its abdomen, which is of a dark-brown hue on the upper part, has a brownish-yellow band extending along the middle, which is crossed, about one third of its length from the anterior extremity, by a somewhat obscure band of the same hue; the colour of the under part is brownish-yellow, and that of the sexual organs is dark, reddish-brown.

Adult males of this species occur in May and June among rank herbage growing in woods about Llanrwst, and in 1840 specimens of the same sex were obtained by Miss Ellen Clayton near Garstang, in Lancashire.

In the summer of 1860 both sexes, in a state of maturity, were found near Hendre House, and also at Bloxworth, in Dorsetshire, by the Rev. O. P. Cambridge.

NERIËNE TIBIALIS.

Neriëne tibialis, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 485.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 268.

Length of the male, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{7}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs have a red-brown hue; the anterior and posterior pairs are equal in length, and the tibiæ of the former are disproportionally strong, having the appearance of being swollen; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The cephalo-thorax is oval, convex, glossy, prominent but obtuse before, where the eyes are situated, and has an indentation in the medial line; the falces are conical, armed with teeth on the inner surface, and somewhat inclined towards the sternum, which is heart-shaped. These parts, with the maxillæ and lip, have a brownish-black tint. The palpi are slender, and resemble the legs in colour; the cubital joint is long and clavate; the radial joint is elongated before into a narrow, oval, hairy process, which extends obliquely across the upper part of the digital joint towards the inner side, and is terminated by a short, acute spine, curved outwards; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed and complicated in structure, presenting several processes, one of which, situated at the extremity, on the outer side, is curved in a circular form. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black colour; that of the branchial opercula being pale-yellow.

A few adult males of *Neriëne tibialis* were taken in March, 1835, under stones at Oakland.

NERIËNE CORNUTA. Pl. XVIII, fig. 181.

Neriëne cornuta, Blackw., Lond. and Edin. Phil. Mag., third series, vol. iii, p. 190.

— — Blackw., Research. in Zool., p. 372.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 268.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{38}$ th; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The cephalo-thorax is glossy, convex where the eyes are situated, compressed before, and rounded on the sides, which are marked with furrows converging towards a large indentation in the medial line; the falces are strong, conical, vertical, and armed with teeth on the inner surface; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex; the sternum is convex and heart-shaped. These parts are of a very dark-brown colour, the anterior region of the cephalo-thorax being almost black. The legs have a light, red-brown tint, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, rather convex above, projecting over the base of the cephalo-thorax; it is sparingly clothed with short hairs, glossy, and of a black hue, that of the branchial opercula being pale-yellow.

The male does not differ from the female in colour, but the anterior part of its cephalo-thorax is surmounted by two conical protuberances, directed forwards, before which the eyes

are situated. The radial joint of its palpi is shorter than the cubital, and has three apophyses at its extremity; one on the inner side, which is long, slender, curved, and pointed; a small one in front, also curved and pointed; and a short, obtuse one underneath; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complex, with spine-like processes, and of a dark, red-brown colour.

In May, 1833, males of this remarkable spider, which had acquired their full development, were discovered on rails and gates at Oakland, and both sexes have since been met with in the same locality and at Crumpsall Hall.

NERIËNE BITUBERCULATA. Pl. XVIII, fig. 182.

Theridion bituberculatum, Wider, Museum Senckenb., Band i, p. 222, taf. 15, fig. 2.

Argus bituberculatus, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 363.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The cephalo-thorax is oval, convex, glossy, depressed at the base, with an indentation in the medial line, and the anterior part, which is elevated, is surmounted by two large, parallel, conical protuberances, directed forwards, having a prominent ridge on each side of their base; it is of a reddish-yellow colour, the conical protuberances being much the palest, and the narrow, lateral margins and ridge on each side of the protuberances having a brown hue. The eyes are small, and disposed in two transverse rows on the anterior part of the cephalo-thorax, immediately below the conical protuberances, but high above the frontal margin; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a minute tubercle, and are almost in contact; the anterior eyes of the trapezoid are the smallest of the eight. The falces are conical, vertical, and armed with a few teeth on the inner surface; the maxillæ are enlarged at the base, where the palpi are inserted, pointed at the extremity, and strongly inclined towards the lip; the sternum is broad, glossy, and heart-shaped; the legs are moderately long, and supplied with hairs; the fourth pair is rather the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three small claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. These parts are of a reddish-yellow colour. The lip is semicircular, prominent at the apex, and has a dark-brown hue. The palpi are robust, and resemble the legs in colour, with the exception of the digital joint, which has a brown hue; the cubital joint is clavate; the radial joint is short, and projects from its extremity three apophyses; one, situated on the inner side, is long, slender, and curved outwards; another, on the outer side, is strong and obtuse, and between these there is a small, dark-coloured one, which terminates in two minute, diverging points; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complex in structure, with a black, filiform spine, curved in a circular form, and

some prominent, whitish membrane at their extremity, and are of a red-brown colour. The abdomen is oviform, thinly clothed with short hairs, convex above, projecting over the base of the cephalo-thorax, and has a brownish-black hue, that of the branchial opercula being pale-yellow.

The female resembles the male in colour, but is without the two large, conical protuberances on the anterior elevation of the cephalo-thorax.

Adult males of this species, which is very closely allied to *Neriëne cornuta*, were taken by the Rev. O. P. Cambridge at Bloxworth, in the spring of 1861.

M. Wider, in his description of *Theridion bituberculatum*, states that "die Beine sind ziemlich kurz und nicht sehr ungleich, das dritte Paar am kürzesten, dann folgt das vierte, dann das erste und das zweite ist das längste;" and M. Walckenaer, in treating upon the structure of *Argus bituberculatus*, remarks that "les pattes sont peu allongées, la première paire est la plus longue, ensuite la seconde, la troisième est la plus courte." Now, as regards the legs of *Neriëne bituberculata*, the fourth pair is the longest, then the first, and the third pair is the shortest; it is probable, however, that these discrepancies may be more apparent than real, for, without measurement, it is difficult to ascertain the relative length of the limbs of spiders, especially when they do not differ greatly in longitudinal extent; and this difficulty is chiefly occasioned by the unequal breadth of the cephalo-thorax, to which they are articulated.

NERIËNE APICATA. Pl. XVIII, fig. 183.

Neriëne apicata, Blackw., Annals and Mag. of Nat. Hist., second series, vol. vi, p. 339.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 269.

Length of the male, $\frac{1}{18}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{3}{20}$ ths; length of a leg of the third pair, $\frac{1}{9}$ th.

The legs are provided with hairs, and are of a reddish-brown colour, the femora being the reddest; the posterior is longer than the anterior pair, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; an obtuse, conical prominence, surmounted by a tuft of short hairs, occurs immediately behind the eyes, near the base of which, on each side, there is a small cavity; the falces are conical, vertical, somewhat divergent at the extremity, and armed with teeth on the inner surface; the maxillæ are enlarged where the palpi are inserted, obliquely truncated at the extremity, on the outer side, and inclined towards the lip, which is semicircular and prominent at the apex; the sternum is broad, convex, glossy, and heart-shaped. These parts have a very dark, reddish-brown hue. The anterior eyes of the four intermediate ones forming the trapezoid are the smallest of the eight. The palpi resemble the

legs in colour, but are rather paler; the humeral joint is somewhat curved towards the cephalo-thorax; the cubital joint is clavate, and the radial, which is short, has two curved, pointed, black apophyses at its extremity, in front, the superior one being the larger and more prominent; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, complicated in structure, and of a reddish-brown colour. The abdomen is oviform, sparingly clothed with hairs, convex above, projecting over the base of the cephalo-thorax, and has a brownish-black hue; that of the branchial opercula being brown.

A male of *Neriëne apicata*, having the palpal organs completely developed, was taken on a rail at Oakland, in February, 1850, and in the autumn of 1853 a specimen of the same sex was received from the Rev. Hamlet Clark.

NERIËNE RUBENS. Pl. XVIII, fig. 184.

Neriëne rubens, Blackw., Lond. and Edin. Phil. Mag., third series, vol. iii, p. 189.

— — Blackw., Research. in Zool., p. 370.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 269.

Theridion cheliferrum, Wider, Museum Senckenb., Band i, p. 237, taf. 16, fig. 4.

Argus cheliferrus, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 364.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{18}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The eyes are seated on black spots. The cephalo-thorax is compressed and abruptly elevated before, rounded on the sides, slightly convex, and glossy, with an indentation in the medial line; the falces are powerful, conical, armed with strong teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are moderately enlarged at the extremity, and inclined towards the lip, which is semicircular and prominent at the apex; the legs are provided with hairs and a few spines, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base; the palpi are abundantly supplied with black spines, one, longer than the rest, projecting from the extremity of the cubital joint, in front. These parts are of a yellowish-red colour. The abdomen is oviform, somewhat convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a red-brown hue, which varies in intensity in different individuals; the colour of the sexual organs is black, tinged with red; and that of the branchial opercula is pale-orange.

The male is rather smaller than the female, and the tibiæ of the first and second pairs of legs are dilated at the extremity, underneath, which enlargements are amply provided with fine, long hairs. The humeral joint of the palpi is very robust, increasing gradually in diameter from its base to its extremity, which is armed with a strong spur and numerous minute, pointed, black spines on the upper part; the cubital joint is short and strong; the radial joint

has two apophyses ; one, on the inner side, which tapers to its extremity, is curved obliquely across the upper part of the digital joint, and has a strong, pointed process near its base ; the other, situated on the outer side, is much shorter and more obtuse ; the digital joint is oval, convex, and hairy externally, concave within, comprising the palpal organs ; these organs have several curved, spinelike processes, and are of a red-brown colour.

The palpi of the male of this species, which is found among heath and grass in Denbighshire, Yorkshire, Berwickshire, and the south of Lancashire, are very peculiar in structure ; M. Wider has well remarked that "sie haben viel Aehnlichkeit mit der Scheere der Krebse, nur dass ein eigentlicher Daumen fehlt." (Museum Senckenbergianum, B. 1, p. 238.)

NERIËNE NIGRA. Pl. XVIII, fig. 185.

Neriëne nigra, Blackw., Research. in Zool., p. 378.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 269.

Length of the female, $\frac{1}{10}$ th of an inch ; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{20}$ rd ; breadth of the abdomen, $\frac{1}{20}$ th ; length of an anterior leg, $\frac{1}{4}$ th ; length of a leg of the third pair, $\frac{1}{10}$ th.

The anterior eyes of the four intermediate ones forming the trapezoid are very minute and near to each other. The cephalo-thorax is convex, glossy, prominent where the eyes are seated, somewhat compressed before, and rounded on the sides, which are marked with slight furrows converging towards an indentation in the medial line ; the falces are strong, conical, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped ; the maxillæ are enlarged at the extremity, and inclined towards the lip, which is semicircular and prominent at the apex. These parts are of a brownish-black colour, the falces and maxillæ having a faint tinge of red. The legs, which are provided with hairs and a few fine spines, have a red-brown tint, and the anterior and posterior pairs are equal in length ; each tarsus is terminated by three claws ; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax ; it is thinly clothed with hairs, glossy, and of a brownish-black hue ; that of the branchial opercula being brown.

The legs of the male are redder than those of the female, and the prominence at the anterior part of its cephalo-thorax is surmounted by numerous very short hairs. Its palpi are long, and the extremities of the humeral joints almost touch when in a state of repose ; the cubital joint is long and clavate ; the radial joint is strong, and is elongated into a narrow, oval process, which extends in front of the digital joint, and is terminated by a corneous point curved outwards ; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complex with spinelike processes, one on the outer side being curved in a circular form, and are of a dark, red-brown colour.

Males and females of *Neriëne nigra* were obtained in the autumn of 1833 on posts and

rails at Oakland and Crumpsall Hall. The attention of observers is directed to this common aëronautic spider by the frequency of its aërial excursions.

NERIËNE GRAMINICOLA. Pl. XIX, fig. 186.

Neriëne graminicola, Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 269.

Linyphia — Sund., Vet. Acad. Handl., 1829, p. 213.

Theridion rubripes, Hahn, Die Arachn., Band i, p. 92, tab. 22, fig. 70.

Micryphantes rubripes, Koch, Die Arachn., Band iv, p. 121, tab. 142, figs. 328, 329.

Argus graminicolis, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 351.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{7}$ th; length of a leg of the third pair, $\frac{1}{9}$ th.

The cephalo-thorax is oval, convex, glossy, rather prominent before, and has an indentation in the medial line; it is of a pale-brown colour, with narrow, dark-brown lateral margins. The falces are powerful, subconical, convex near the base, armed with teeth on the inner surface, and a pointed, conical protuberance in front, nearer to the extremity than the base; they are of a red-brown colour, and are inclined towards the sternum, which is broad, heart-shaped, and of a dark-brown hue. The maxillæ are convex at the base, and provided with a conical process near the extremity, on the outer side; they have a red-brown tint, and are strongly inclined towards the lip, which is short, somewhat quadrate, and of a dark-brown hue. The legs are of a yellowish-brown colour, tinged with red, particularly the femora, and the anterior and posterior pairs are equal in length; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour; the cubital joint is clavate, and has a prominent, conical, pointed apophysis at its extremity, on the under side; the radial is stronger than the cubital joint, and is terminated by three apophyses; two, which are large and obtuse, project over the base of the digital joint, and the other, which is small and pointed, is situated underneath; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, complicated in structure, with a strong, prominent process on the outer side, a smaller and darker one at the extremity, and are of a reddish-brown colour. The lateral eyes are rather the largest, and the anterior ones of the four forming the trapezoid are the smallest of the eight. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, and of a black hue.

According to M. Koch, the female is rather larger and lighter-coloured than the male.

An adult male of this spider, which has the essential characters of a *Neriëne*, was taken among herbage in a field at Southgate in May, 1850, and is in Mr. Walker's cabinet.

NERIËNE CORNIGERA. Pl. XIX, fig. 187.

Neriëne cornigera, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xvii, p. 233.

— — Blackw., Ibid., vol. xx, p. 501.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ th; breadth of the abdomen, $\frac{1}{32}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The eyes are seated on black spots; the four intermediate ones describe a trapezoid, the two anterior ones, which form its shortest side, being the smallest of the eight. The cephalo-thorax is oval, convex, glossy, slightly elevated before, where the eyes are situated, and has an indentation in the medial line; the falces are conical, divergent at the extremity, armed with teeth on the inner surface, and somewhat inclined towards the sternum, which is broad, convex, glossy, and heart-shaped; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex; the legs are slender and slightly hairy; the anterior and posterior pairs are the longest and equal in length, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved, and the inferior one is inflected near its base. These parts are of a brownish-yellow colour, the sternum, base of the lip, and tibiæ of the first and second pairs of legs being the brownest. The palpi have a brownish-yellow hue, the digital joint being the brownest; the cubital and radial joints are short, the latter, which is the larger, is prominent at its extremity, in front, and has several long bristles at its base; the digital joint is oval, with a long, conical, hornlike process at its base, whose pointed termination extends to the extremity of the cubital joint, and is provided with one or two long bristles; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a small, black, curved, pointed spine at the base, on the outer side, and are of a yellowish-brown colour. The abdomen is oviform, convex above, and projects a little over the base of the cephalo-thorax; it is thinly clothed with hairs, and of a dark, dull-brown hue, that of the spinners being pale, yellowish-brown.

This remarkable spider was discovered among moss growing under trees in a wood on the northern slope of Gallt y Rhyg, in the autumn of 1854.

NERIËNE MONTANA.

Neriëne montana, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xvii, p. 234.

— — Blackw., Ibid., vol. xx, p. 501.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th;

breadth of the abdomen, $\frac{1}{20}$ th; length of a posterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The eyes are seated on black spots, the two anterior ones of the four forming the trapezoid, which are near to each other, being the smallest and darkest of the eight. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides, which converge towards an indentation in the medial line; the falces are powerful, conical, vertical, and armed with a few teeth on the inner surface; the maxillæ are enlarged at the extremity, and inclined towards the lip, which is semicircular and prominent at the apex; the sternum is broad, heart-shaped, convex, and glossy; the legs, which are moderately long, are provided with hairs and a few fine spines; the fourth pair is slightly longer than the first, which surpasses the second, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. These parts are of a pale, yellow-brown colour, the falces, maxillæ, and lip having a faint tinge of red. The palpi resemble the legs in colour; the cubital and radial joints are short, the latter, which is the stronger, being somewhat produced at its extremity, in front; the digital joint is oval, with a small, conical process at its base, and a lobe near the middle of its outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a prominent, curved, scalelike process at the base, on the outer side, and are of a brownish-red colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a dark, yellowish-brown colour, the branchial opercula and spinners being much the palest.

This spider, which was found on Ingleborough, a mountain in Yorkshire, in September, 1855, was received from Mr. R. H. Meade.

NERIËNE LONGIPALPIS. Pl. XIX, fig. 188.

Neriëne longipalpis, Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 270.

Linyphia — Sund., Vet. Acad. Handl., 1829, p. 212.

— — Sund., Vet. Acad. Handl., 1832, p. 259.

Erigone atra, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 195.

— — Blackw., Research. in Zool., p. 324.

— *dentipalpis*, Koch, Die Arachn., Band viii, p. 90, tab. 278, figs. 659, 660.

Argus longimanus, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 346.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of a posterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs have a reddish-brown hue; the posterior pair is the longest, then the anterior pair, and the third pair is the shortest; each tarsus is terminated by three claws; the two

superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The cephalo-thorax is glossy, very prominent and convex where the eyes are seated, compressed before, rounded on the sides, and indented in the medial line; the falces are powerful, rather convex in front, and have a longitudinal row of small spines towards the outer side; they are armed with strong teeth on the inner surface, and are slightly inclined towards the sternum, which is heart-shaped; the maxillæ are greatly enlarged where the palpi are inserted, and encompass the lip, which is semicircular and prominent at the apex; the four intermediate eyes nearly form a square; the abdomen is oviform, glossy, convex above, projecting over the base of the cephalo-thorax, and is sparingly clothed with short hairs. These parts have a black hue, with the exception of the branchial opercula, which have a yellow tint.

The male differs from the female in several remarkable particulars: it is smaller; the lateral margins of the cephalo-thorax are strongly dentated; and a series of short, sharp spines, slightly curved forwards, occupies the medial line of its anterior convexity. The relative length of its legs also is dissimilar, the anterior being longer than the posterior pair, and these organs, with the palpi, are much redder than those of the female. The humeral joint of the palpi is greatly elongated, much curved, and armed with strong spines underneath; the cubital and radial joints are dilated at their extremities; the former has a large, conical process on its under side, and the latter is terminated by two apophyses; one, which is short and broad, projects in front, and the other, which is more elongated and acute, is situated underneath; the digital joint is of an oblong, oval form; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, and of a very dark, red-brown colour.

This species is widely distributed in England, Wales, Scotland, and Ireland, and is remarkable for its ascents into the atmosphere, as well as for the extraordinary organization of the cephalo-thorax and its appendages in the male. The sexes pair in June, and the female deposits six or seven spherical eggs of a pale, yellowish-white colour in a subglobose cocoon of white silk of a slight texture, which measures about $\frac{1}{16}$ th of an inch in diameter, and is usually attached to the inferior surface of stones.

It is a fact deserving of notice, that *Neriëne longipalpis* can preserve an active state of existence for some days when submerged in water.

The *Theridion dentipalpe* of M. Wider (Museum Senckenbergianum, B. 1, p. 248, taf. 17, fig. 1) is not included among the synonyma of this spider, because it appears to differ from it in structure and colour; on the latter particular, however, little stress can be laid, as the specimens collected by M. Wider were preserved in spirit of wine.

NERIËNE FUSCA. Pl. XIX, fig. 189.

Neriëne fusca, Blackw., Research. in Zool., p. 382.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 270.

Length of the female, $\frac{1}{9}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of a posterior leg, $\frac{1}{7}$ th; length of a leg of the third pair, $\frac{1}{9}$ th.

The eyes are seated on black spots. The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; its colour is yellowish-brown, the lateral margins being the darkest, and on the frontal margin, immediately above the base of each falx, there is a triangular spot of a red-brown hue. The falces are strong, conical, convex in front, and of a pale red-brown colour; they are armed with small teeth on the inner surface, and are inclined towards the sternum, which is heart-shaped, and has a brown tint, the margins being rather the darkest. The maxillæ are powerful and encompass the lip, which is semicircular and prominent at the apex. The former of these organs are like the falces in colour, and that of the latter organ is dark-brown, with a tinge of red at its extremity. The legs have a yellowish-brown tint, and the posterior is rather longer than the anterior pair; each tarsus is terminated by three claws; the two superior ones are curved and minutely pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is ovi-form, convex above, projecting over the base of the cephalo-thorax; it is sparingly clothed with hairs, and of a dark-brown hue, the medial line of the upper and under parts being slightly paler, and the colour of the branchial opercula is yellow.

The male is smaller than the female; its cephalo-thorax is also more gibbous immediately behind the eyes, and, with the falces, maxillæ, sternum, legs, and palpi, is of a red-brown colour, that of the abdomen being brown-black. The radial joint of the palpi is stronger than the cubital, and has a small, acute apophysis at its extremity, underneath, and a larger one in front, which terminates in two points; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, with a short, curved, obtuse process at the upper part, a small pointed spine of a semicircular form at their extremity, and are of a red-brown colour.

Neriëne fusca occurs on rails and under stones in Lancashire and Denbighshire. It pairs in the month of June.

NERIËNE AGRESTIS. Pl. XIX, fig. 190.

Neriëne agrestis, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 23.

— — Blackw., Ibid., p. 120.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{14}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of a posterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs are hairy, and the posterior is longer than the anterior pair; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base; the cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are conical, convex in front, near to the base, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is broad, rather convex, glossy, and heart-shaped; the maxillæ are enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex. These

parts, with the palpi, are of a brown colour; the lip, sternum, and anterior part of the cephalo-thorax being the darkest, and the legs and palpi, which are much the palest, having a yellowish or light-reddish tinge. The abdomen is oviform, glossy, sparingly clothed with hairs, convex above, and projects over the base of the cephalo-thorax; it is of a dark-brown colour, tinged with olive, the medial line of the upper part, in some individuals, being the palest, the sexual organs have a dark, reddish-brown tint, and the colour of the branchial opercula is yellowish-brown.

The male is much smaller than the female, but it resembles her in colour. The cubital and radial joints of its palpi are short; the latter, which is the larger, projects two very minute apophyses from its extremity; one, situated in front, is crescent-shaped, the cusps being acute; and the other, which is shorter and more obtuse, occurs on the under side; the digital joint has a short oval form; it is convex and hairy externally, concave within, comprising the palpal organs; these organs are moderately developed, protuberant, complex in structure, with a small, curved, black spine at their extremity, whose point terminates in a prominent, semitransparent membrane, and are of a red-brown colour.

This species, which is closely allied to *Neriëne fusca*, is met with among herbage and under stones in pastures near woods at Oakland; it has also been taken in Berwickshire by Mr. J. Hardy. The sexes are adult in autumn.

NERIËNE VIGILAX. Pl. XIX, fig. 191.

Neriëne vigilax, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 24.

— — Blackw., Ibid., p. 120.

Length of the male, $\frac{1}{11}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{50}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{11}$ th.

The legs are hairy, of a red colour, tinged with brown, and the posterior is longer than the anterior pair; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The cephalo-thorax is oval, convex, glossy, with a slight indentation in the medial line, and has a dark-brown tint, the lateral margins being the darkest. The falces are conical, armed with fine teeth on the inner surface, and slightly inclined towards the sternum, which is broad, somewhat convex, glossy, and heart-shaped. The maxillæ are enlarged at the base, where the palpi are inserted, and inclined towards the lip, which is semicircular. The colour of the falces and maxillæ is pale-brown, tinged with red, and that of the sternum and lip dark-brown. The palpi have a yellowish-brown hue; the cubital and radial joints are short, and the latter projects two apophyses from its extremity; the larger one curves outward in front of the digital joint, and the smaller one, which is acute, is situated underneath; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly deve-

loped, prominent, complicated in structure, with a black, filiform spine at their extremity, on the outer side, which is enveloped in delicate membrane and curved in a circular form; their colour is reddish-brown. The abdomen is oviform, thinly clothed with hairs, convex above, projecting a little over the base of the cephalo-thorax, and has a black hue, that of the branchial opercula being yellowish-brown.

An adult male of this species was found running on a gravel-walk at Oakland in July, 1852.

NERIÈNE GIBBOSA.

Neriène gibbosa, Blackw., Linn. Trans., vol. xviii, p. 653.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 270.

Argus gibbosus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 513.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{1}{7}$ th; length of a leg of the third pair, $\frac{1}{9}$ th.

The legs are provided with hairs and a few erect spines; they have a yellowish-brown hue, and the posterior is rather longer than the anterior pair; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The cephalo-thorax is oval, glossy, rather gibbous near the middle, with slight furrows on the sides converging towards an indentation in the medial line; the falces are strong, conical, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is broad and heart-shaped; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex. These parts are of a dark-brown colour, the falces and maxillæ being the palest. The anterior eyes of the four forming the trapezoid are the smallest of the eight. The palpi resemble the legs in colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a very dark-brown hue, that of the branchial opercula being dull-yellow.

The male is rather smaller than the female, but it resembles her in colour. Near the middle of its cephalo-thorax there is a large, obtuse prominence, between which and the anterior part, where the eyes are situated, there is a deep depression thickly clothed with strong hairs; and the falces have a small, conical protuberance in front, near the extremity, towards the inner side. The radial joint of the palpi is rather larger than the cubital, and projects two minute, pointed apophyses from its extremity; one is in front, and the other, which is the smaller, is on the inner side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; they are neither highly developed nor very complicated in structure, a dark, reddish-brown process, curved outwards, occurring at the base, and their colour is yellowish-brown, faintly tinged with red.

Specimens of this spider were discovered under stones in a moist pasture at Oakland in May, 1838.

NERIËNE TUBEROSA. Pl. XIX, fig. 192.

Neriëne tuberosa, Blackw., Linn. Trans., vol. xviii, p. 654.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 270.

Argus tuberosus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 514.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The cephalo-thorax is oval, glossy, gibbous near the middle, with slight furrows on the sides converging towards an indentation in the medial line; the falces are strong, conical, armed with teeth on the inner surface, and have a small, conical protuberance in front, near the extremity, towards the inner side; they are slightly inclined towards the sternum, which is broad and heart-shaped; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex. These parts are of a dark-brown colour, the falces and maxillæ being the palest. The legs have a yellowish-brown hue, and the posterior is rather longer than the anterior pair; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The anterior eyes of the four forming the trapezoid are the smallest of the eight. The palpi resemble the legs in colour, and the radial, which is rather stronger than the cubital joint, projects two minute, pointed apophyses from its extremity; one situated in front, and the other, which is the smaller, on the inner side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; they are moderately developed, complicated in structure, with a curved process at the base, directed outwards, and a small, black, pointed, curved spine at the extremity; their colour is red-brown. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a very dark-brown hue, that of the branchial opercula being dull-yellow.

In May, 1838, an adult male of this species was found under a stone in a moist pasture at Oakland.

NERIËNE TRILINEATA. Pl. XIX, fig. 193.

Neriëne trilineata, Blackw., Linn. Trans., vol. xix, p. 124.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 271.

Linyphia bucculenta, Sund., Vet. Acad. Handl., 1831, p. 109.

— *reticulata*, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 260.

Theridion reticulatum, Hahn, Die Arachn., Band ii, p. 39, tab. 54, fig. 124.

Bolyphantes trilineatus, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 9.

— — Koch, Die Arachn., Band viii, p. 67, tab. 272, fig. 641.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{12}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of a posterior leg, $\frac{2}{3}$ ths; length of a leg of the third pair, $\frac{3}{10}$ ths.

The eyes are seated on black spots, the anterior ones of the four forming the trapezoid, which are placed on a slight protuberance, being the smallest of the eight. The cephalo-thorax is convex, glossy, compressed before, and rounded on the sides, which are marked with furrows converging towards a large indentation in the medial line; it is of a yellowish-brown colour, with narrow, black margins, and a band of the same hue extending along the middle. The falces are powerful, conical, vertical, gibbous in front, near the base, armed with teeth on the inner surface, and of a red-brown hue. The maxillæ are short, strong, enlarged at the extremity, inclined towards the lip, and have a pale, red-brown tint. The lip is semi-circular and of a reddish-brown colour, the apex, which is prominent, being the palest. The sternum is heart-shaped, with slight prominences on the sides, opposite to the articulation of the legs, and its colour is yellowish-brown. The legs, which are moderately robust, are provided with hairs and black spines; they are of a yellowish-brown hue, with brownish-black annuli, and the posterior is rather longer than the anterior pair; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is oviform, glossy, thinly clothed with short hairs, convex above, projecting over the base of the cephalo-thorax; the upper part is of a yellowish-white or pinkish hue, intersected by numerous fine, dark-brown lines, which give it a reticulated appearance; along the middle there extends a fine, dark-brown band, which is somewhat ramified and tapers to its posterior extremity; on each side of this band there is a series of obscure, irregular, dark-brown spots, confluent or nearly so, which form two bands converging to the spinners; the under part is of a dark-brown colour, with a few yellowish spots; the sexual organs have a dark, reddish-brown hue; that of the spinners is red-brown; and the branchial opercula are of a yellow colour, with red-brown lips.

The male bears a close resemblance to the female, but it is smaller and rather lighter coloured. The metatarsal joint of its anterior pair of legs, which is enlarged, is depressed on the upper part, and provided with numerous hairs underneath. The cubital joint of the palpi is clavate, and has a long, black bristle connected with its extremity, in front; it is larger than the radial joint, which has several long, black bristles on its under and inner sides, and a conical apophysis underneath, near the extremity, projecting from it at right angles, and having an enlargement near its base, on the outer side; the digital joint has somewhat of an elongated oval form, with three obtuse processes near the outer side of the base, the middle one being the most prominent; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a large, obtuse process at their base, which is curved outwards, and extends nearly to the articulation of the cubital with the radial joint, and several short, curved, pointed ones at the extremity; they are of a dark, reddish-brown colour. The convex sides of the digital joints are directed towards each other.

Neriene trilineata is not uncommon in the neighbourhood of Manchester, where it conceals itself under stones. Mr. R. H. Meade has met with it in Yorkshire, and Mr. J. Hardy has taken it in Berwickshire.

Probably the spider named *Neriëne graminicolens* in the 'Transactions of the Linnean Society,' vol. xix, p. 125, is a variety of this species, from which it differs chiefly in not having dark annuli on the legs and palpi.

The contraction and expansion of the dorsal vessel are very apparent in *Neriëne graminicolens*, which occurs among grass and coarse herbage in pastures at Oakland, and seems to be identical with the *Linyphia cellulana* of Professor Sundevall (Vet. Acad. Handl., 1831, p. 108).

NERIËNE RUBELLA. Pl. XIX, fig. 194.

Neriëne rubella, Blackw., Linn. Trans., vol. xviii, p. 648.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 271.

Micryphantes isabellinus, Koch, Die Arachn., Band viii, p. 109, tab. 282, figs. 676-678.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{3}{20}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The first and fourth pairs of legs, which are the longest, are equal in length, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base; the cephalo-thorax is convex, glossy, compressed and rather prominent before, rounded on the sides, and has an indentation in the medial line; the falces are powerful, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad, convex, and heart-shaped. These parts, with the maxillæ and palpi, are of a yellowish-red colour, the legs and palpi being the palest, and the lip, which is semicircular and prominent at the apex, has a red-brown tint. The eyes are seated on black spots, and the anterior ones of the four forming the trapezoid are much the smallest of the eight. The abdomen is oviform, glossy, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax, and has a yellowish-red tint, which varies greatly in intensity in different individuals; the hue of the sexual organs is black, faintly tinged with red; and that of the branchial opercula is dull-yellow.

The male resembles the female in colour, but the anterior part of its cephalo-thorax, where the eyes are seated, is more prominent, and the relative length of its legs is different, the first pair being the longest, and the second and fourth pairs equal in length; the tibiæ also of the first and second pairs are somewhat dilated underneath, near their extremity, and these enlargements are thickly clothed with long, fine hairs. The palpi are of a yellowish-red colour, with the exception of the radial and digital joints, which have a reddish-brown hue; the cubital joint is remarkably large, very protuberant on the inner side, and provided with an acute apophysis in front, near the outer side; the radial joint is crescent-shaped, the lower and much the longer limb of the crescent being turned outwards, in front of the digital joint, which is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs

are highly developed, prominent, complicated in structure, with two long, filiform, black spines, connected with semitransparent membrane, curved round the inner side, and are of a red-brown colour.

This species, which bears a strong resemblance to *Neriëne rubens*, is found under stones and on plants growing in woods at Oakland, and Mr. J. Hardy has captured it in Berwickshire. The male has the palpal organs fully developed in October.

NERIËNE VARIEGATA. Pl. XIX, fig. 195.

Neriëne variegata, Blackw., Linn. Trans., vol. xviii, p. 650.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 271.

Argus variegatus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 513.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{3}{20}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs are slender, provided with hairs and a few erect spines, and of a yellowish-brown colour, with black annuli; the first and fourth pairs, which are the longest, are equal in length, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The cephalo-thorax is convex, glossy, compressed before, and rounded on the sides, which are marked with furrows converging towards an indentation in the medial line; it is of a yellowish-brown colour, with blackish margins, a longitudinal row of small, black spots on each side, and a black patch of a triangular form, whose vertex is directed backwards, immediately behind the eyes, which are seated on black spots. The falces are long, powerful, divergent at the extremity, armed with a few teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped. These parts, with the maxillæ, lip, and palpi, have a yellowish-brown hue, the sternum and lip being the darkest. The abdomen is oviform, thinly clothed with hairs, very convex above, and projects over the base of the cephalo-thorax; it is of a dull-yellow colour, with a black band in the medial line of the upper part extending rather more than a third of its length; the anterior part of the band, which is triangular, has its vertex directed forwards, and the posterior part is narrower and somewhat ramified; from the termination of the band a longitudinal row of irregular, black spots extends on each side of the medial line, a few of which unite immediately above the spinners and form short, curved, transverse lines; numerous black streaks and patches occur on the sides, and the under part and branchial opercula have a dull, yellowish-brown hue; the sexual organs are of a red-brown colour; they are prominent, and have a curved process in connection with them, which is greatly enlarged at its extremity.

The male is rather smaller than the female, but it resembles her in the design formed by the distribution of its colours; the relative length of its legs, however, is different, the anterior

being longer than the posterior pair. The cubital and radial joints of the palpi are short; the latter is the stronger, and the former has a long bristle projecting from its extremity, in front; the digital joint is somewhat oval, with a large lobe on the outer side, and a small process at the base, which is notched at its extremity and curved outwards; it is convex and hairy externally, concave within, comprising the highly developed palpal organs, which are complicated in structure, and of a red-brown colour.

In December, 1837, males and females of this spider, in a state of maturity, were obtained under stones on Gallt y Rhyg, a mountain in the vicinity of Oakland; and in 1841 Miss Ellen Clayton captured specimens of both sexes at Ingleton, in Yorkshire.

NERIENE PILOSA. Pl. XIX, fig. 196.

Myagrus pilosus, Templeton, MS. History of Irish Arachnida.

Length of the female, $\frac{1}{8}$ th of an inch.

The cephalo-thorax is oval, of a pale-brown colour, and is edged by a fine, black line; there is a dark, narrow, medial line, which is obsolete, except behind the eyes and at the middle thoracic point, and from the latter dark lines extend to the coxæ; underneath it is of a pale-brown hue, with a darker edge. The abdomen is ovate, thickly covered with fine, black hairs, and the upper part is of a pale, yellowish-brown colour; underneath it has a blackish hue, with a square and rather paler part immediately adjoining the branchial opercula. The legs are covered with fine hairs, and have a few very fine spines; they are of a brown colour, except at the articulations, which have a yellowish tint.

This spider is found at Cranmore, but is rather rare.

NERIENE PALLIDULA. Pl. XIX, fig. 197.

Xenophonius pallidulus, Templeton, MS. History of Irish Arachnida.

Length of the female, $\frac{1}{10}$ th of an inch.

The legs are hairy, spiny, and of a pale-yellow colour; the first pair is the longest, the second and fourth pairs are equal in length, and the third pair is the shortest. The cephalo-thorax is rotund, slightly compressed before, and of a pale, yellowish-brown colour; from the central thoracic point radii of a deeper brown pass to the coxæ, and a fine, black line occurs on the margins; underneath it is of a yellowish-brown hue deepening to black at the edges. The abdomen is ovate; the upper part is of a yellowish-gray colour, the sides and posterior region being darker; in the middle there is a dagger-shaped, dark macula, and posteriorly three double, dark lines meet in an angle at the spinners; underneath it has a blackish hue, the

central part being paler, and the anus is very black. The three double lines at the apex of the abdomen are obsolete in some specimens.

At Cranmore this species is not uncommon. It appears to belong to the genus *Neriëne*, though an approximation to the *Theridia* is observable in the form of the maxillæ.

NERIËNE CARINATA. Pl. XIX, fig. 198.

Ceroclus carinatus, Templeton, MS. History of Irish Arachnida.

Length of the female, $\frac{1}{8}$ th of an inch.

The cephalo-thorax, which is nearly circular, has an elevated ridge in the medial line, and the sides are depressed till they are almost horizontal; it is of a brown colour, edged with black, and black lines descend from the middle thoracic point and pass to the origins of the legs; underneath it has a brownish-black hue. The abdomen is ovate, tumid, hairy, and of a grayish-black colour on the upper part, with numerous waved, silvery lines on its surface; underneath it is jet-black. The legs are moderately long, taper, provided with hairs and very fine spines, and are of a brown hue; the first pair is the longest, then the fourth, and the third pair is the shortest.

This spider occurs in the grove at Cranmore.

NERIËNE SULCATA.

Neriëne sulcata, Blackw., Annals and Mag. of Nat. Hist., vol. xiii, p. 184.

— — Blackw., Ibid., second series, vol. ix, p. 271.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{28}$ th; length of an anterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The legs are provided with hairs, and are of a red colour, tinged with brown; the first pair is rather the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The cephalo-thorax is oval, convex, glossy, with a small, longitudinal indentation immediately behind each lateral pair of eyes, and a slight depression in the medial line; the falces are powerful, conical, convex in front, near the base, divergent at the extremity, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are strong, enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex. These parts have a brown-black hue, the maxillæ, which are the palest, and the falces having

a tinge of red. The anterior eyes of the four intermediate ones forming the trapezoid are much the smallest of the eight, and those of each lateral pair are contiguous and seated obliquely on a small tubercle. The palpi resemble the legs in colour; the cubital and radial joints are short, the latter, which is the stronger, projecting a somewhat pointed apophysis from its extremity, in front; the digital joint is of an irregular oval form, having a lobe near the middle of the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a long, black, filiform spine, enveloped in delicate membrane, extending from the upper part beyond their extremity, and are of a red-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue, that of the branchial opercula being yellow.

An adult male of this species, which is nearly allied to the spiders constituting the genus *Walckenaëra*, was discovered on the steps at Oakland in June, 1841; and another specimen of the same sex was met with on the gravel-walk in front of the house in July, 1852.

NERIËNE HERBIGRADA. Pl. XIX, fig. 199.

Neriëne herbigrada, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xiii, p. 179

— — Blackw., Ibid., vol. xiv, p. 32.

Length of the female, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{34}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{28}$ th; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{13}$ th.

The cephalo-thorax is oval, convex, glossy, with an indentation in the medial line; the falces are powerful, conical, vertical, divergent at the extremity, and armed with teeth on the inner surface; the maxillæ are enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex; and the sternum is broad and heart-shaped. These parts have a brown hue; the sternum and the lip are the darkest, and the falces and maxillæ, which are the palest, are faintly tinged with red. The eyes are seated on black spots; those of each lateral pair are placed obliquely on a small tubercle, and are contiguous, and the anterior eyes of the four intermediate ones forming the trapezoid, which are near to each other, are the smallest and darkest of the eight. The legs are provided with hairs, and have a yellowish-brown hue; the anterior and posterior pairs, which are the longest, are equal in length, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, hairy, glossy, convex above, and projects over the base of the cephalo-thorax; it is of a pale-brown colour, with obscure spots of a deeper shade, the under part being rather the darkest; the sexual organs have a reddish-brown hue, and their anterior margin is prominent and semicircular.

The colours of the sexes are similar. The male has the humeral joint of its palpi curved

towards the cephalo-thorax, which has a narrow indentation immediately behind each lateral pair of eyes; the radial is larger than the cubital joint, and projects a strong, obtuse apophysis from its extremity, in front, towards the inner side; the digital joint is somewhat oval, with a large lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a curved, prominent process at their base, on the outer side, another, situated underneath, which has its extremity enlarged and depressed, and two long, contiguous, filiform, black spines, originating near their base, on the outer side, which pass obliquely downwards, and curving round their extremity extend considerably beyond the termination of the digital joint; the colour of these organs is red-brown.

Early in October, 1853, both sexes of *Neriëne herbigrada*, in a mature state, were detected among coarse herbage and moss growing in woods on the northern slope of Gallt y Rhyg. Like *Neriëne sulcata*, this species makes a near approximation to the spiders of the genus *Walckenaëra*.

NERIËNE ABNORMIS. Pl. XIX, fig. 200.

Neriëne abnormis, Blackw., Linn. Trans., vol. xviii, p. 649.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 272.

Argus abnormis, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 512.

Length of the female, $\frac{1}{7}$ th of an inch; length of the cephalo-thorax, $\frac{1}{14}$ th, breadth, $\frac{1}{19}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{3}{16}$ ths.

The eyes are seated on black spots. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides converging towards an indentation in the medial line; the falces are powerful, conical, convex in front, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are strong, convex underneath, and nearly straight; the lip is semicircular and prominent at the apex. These parts are of a reddish-brown colour, the sternum being rather the darkest, and the falces, maxillæ, and lip the reddest. The legs and palpi are moderately robust, provided with hairs and fine, erect spines, and have a reddish-brown hue. The first and fourth pairs of legs, which are the longest, are equal in length, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The abdomen is oviform, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; it is of a dull-brown colour, obscurely mottled with darker brown; a depressed, oval, flesh-coloured process is connected with the anterior margin of the sexual organs; and the branchial opercula have a yellowish-white hue.

The male is rather smaller than the female, and the relative length of its legs is different, the first pair being longer than the fourth; its abdomen also is darker coloured than that of

the female, and its cephalo-thorax, legs, palpi, falces, maxillæ, and lip, are of a red colour, slightly tinged with brown. The cubital and radial joints of its palpi are short, the latter being much the stronger, and somewhat produced in front; the digital joint is of an irregular oval form, having a large lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a curved, pointed process, enveloped in semitransparent membrane, at the extremity, and a large one at the upper part, consisting of two branches; one, directed upwards, extends nearly to the articulation of the radial with the cubital joint, and the other is directed downwards; both are pointed and curved outwards, an obtuse prominence occurring near the base of the latter, within the curve; these organs are of a reddish-brown colour. The convex sides of the digital joints are directed towards each other.

By the structure of its oral apparatus and by the disposition and relative size of its eyes this spider makes a near approximation to the *Liniphya*. It was taken under stones at Crumpsall Hall, in October, 1836.

NERIËNE RUBRIPES. Pl. XIX, fig. 201.

Neriëne rubripes, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 485.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 272.

Length of the female, $\frac{9}{16}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{5}{24}$ ths.

The legs are moderately robust, and provided with hairs and a few fine spines; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. These organs, with the palpi, have a red tint. The cephalo-thorax is oval, convex, glossy, with furrows on the sides, converging towards an indentation in the medial line; the falces are powerful, conical, convex in front, divergent at the extremity, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped; the maxillæ are strong, and inclined towards the lip, which is semi-circular and prominent at the apex. These parts are of a red-brown colour, the falces, lip, and margins of the sternum being the darkest. The eyes are seated on black spots; the four intermediate ones form a trapezoid, whose shortest side is before, those of the anterior pair being the smallest of the eight. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; a large, prominent, curved process, of a red-brown colour, connected with the anterior margin of the sexual organs, is directed backwards, and the branchial opercula have a pale-yellow tint. Some individuals have the abdomen of a yellowish-brown hue, and the other parts generally lighter coloured.

The male is somewhat smaller and darker coloured than the female; its falces have a conical process near the extremity, towards the inner side, and its maxillæ are remarkably convex externally, immediately before the insertion of the palpi. The humeral joint of the palpi is curved towards the cephalo-thorax; the cubital and radial joints are short, the latter being gibbous on the under side, near the middle; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are prominent, highly developed, complex in structure, and of a dark, red-brown colour. The digital joints of the palpi have their convex sides directed towards each other.

Mr. Thomas Blackwall found this species under stones, at Oakland, in the summer of 1834, and Mr. J. Hardy has since met with it in Berwickshire.

NERIËNE DUBIA. Pl. XIX, fig. 202.

Neriëne dubia, Blackw., Linn. Trans., vol. xviii, p. 652.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 272.

Argus dubius, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 513.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{44}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{28}$ th; length of an anterior leg, $\frac{1}{9}$ th; length of a leg of the third pair, $\frac{1}{14}$ th.

The four intermediate eyes form a trapezoid whose anterior side is somewhat the shortest, and those of each lateral pair are seated obliquely on a tubercle and are nearly contiguous; the anterior eyes of the trapezoid are the smallest and darkest of the eight. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides, converging towards an indentation in the medial line. The falces are conical, vertical, and armed with a few teeth on the inner surface; the maxillæ are convex near the base, enlarged at the extremity, and inclined towards the lip, which is semicircular and prominent at the apex; and the sternum is heart-shaped. The legs are moderately long, and provided with hairs and a few fine spines; the first pair is rather the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. These parts are of a red-brown colour, the legs being much the palest. The palpi resemble the legs in colour; the cubital and radial joints are short, the latter being considerably produced on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, complicated in structure, with a prominent, slightly curved, pointed spine near the middle, two slender ones, enveloped in delicate membrane, at the extremity, and are of a red-brown colour. The abdomen is oviform, sparingly clothed with hairs, glossy, convex above, projecting over the base of the cephalo-thorax, and of a brownish-black hue, that of the branchial opercula being dark-brown.

A male of *Neriëne dubia* was captured on iron rails at Crumpsall Hall, in October, 1836, and another specimen of the same sex was taken by Mr. F. Walker, at Piercefield, in

Monmouthshire, in the summer of 1853, and was forwarded to Oakland by Mr. R. H. Meade. This species, which has much resemblance to the *Theridia* in external structure, is placed provisionally in the genus *Neriëne* till the female shall be discovered, as the sexes of the same spider frequently differ in the relative length of the legs and in the form of the maxillæ.

Genus—WALCKENAËRA, Blackw.

Eyes distributed on the anterior part of the cephalo-thorax, which sometimes in the females, and usually in the males, is remarkably elevated; the four intermediate eyes describe either a trapezoid whose shortest side is before or a small square, and those of each lateral pair are contiguous, or nearly so.

Maxillæ strong, dilated at the base, where the palpi are inserted, and curved or inclined towards the lip.

Lip semicircular and prominent at the apex.

Legs moderately long and robust; the anterior and posterior pairs, which are the longest, are equal in length, or nearly so, and the third pair is the shortest.

WALCKENAËRA ACUMINATA. Pl. XX, fig. 203.

Walckenaëra acuminata, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 106.

— — — Blackw., Research. in Zool., p. 315, pl. 2, figs. 3—6.

— — — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 272.

Micryphantes camelinus, Koch, Die Arachn., Band iii, p. 11, tab. 76, figs. 168, 169.

Length of the female, $\frac{3}{50}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{13}$ th, breadth, $\frac{1}{50}$ th; breadth of the abdomen, $\frac{1}{13}$ th; length of an anterior leg, $\frac{1}{3}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is oval, very convex, with a minute indentation in the medial line, and an acute, conical prominence in front; the falces are moderately strong, vertical, convex in front, and armed with teeth on the inner surface; and the sternum is oblong, heart-shaped. These parts, with the maxillæ and lip, are glossy, and of a dark, brownish-black colour. The legs are hairy, but destitute of spines; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base; the palpi are robust and without claws; the cubital joint is remarkably short, and the radial and digital joints are somewhat dilated. These organs have a bright-rufous tint. The abdomen is oviform, convex above, projecting a little over the base of the cephalo-

thorax; it is sparingly clothed with hairs, glossy, and of a deep-black hue, that of the branchial opercula being pale-yellow.

The sexes are similar in colour, but the male is smaller than the female, and the anterior prominence of its cephalo-thorax is much more elongated and slender, measuring about $\frac{1}{20}$ th of an inch in length; it is elevated vertically, and dilated near the middle and at the apex, the latter dilatation being separated by a transverse groove into a superior and inferior segment, both of which are rough, with short, strong hairs; on these enlargements the eyes are seated. The cubital joint of the palpi is clavate; the radial joint is short, and terminates in three apophyses; one, situated on the inner side, which is longer than either the exterior or inferior one, and is curved outwards, has a process near its base, on the outer side; the digital joint is somewhat oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a strong spine on the outer side, curved in a circular form, and are of a blackish hue, tinged with red.

Both sexes of this curiously constructed spider were taken by Mr. Thomas Blackwall, in October, 1832, under stones and on rails in the township of Crumpsall. It has since been met with in Yorkshire, Northamptonshire, and Denbighshire, and in the spring of 1849 specimens of the female were received from Mr. J. Hardy, who took them in Berwickshire.

In autumn the female deposits between twenty and thirty spherical eggs, of a yellow colour, not agglutinated together, in a plano-convex cocoon, composed of fine, white silk, of a loosish texture, measuring $\frac{5}{16}$ ths of an inch in diameter; it is attached by the plane surface to the under sides of stones and fragments of rock, and its form is frequently modified by irregularities on the surface of the body to which it adheres.

M. Walckenaer entertains the opinion that his *Argus cornutus* ('Hist. Nat. des Insect. Apt.,' t. ii, p. 367) and the *Theridion cornutum* of M. Wider ('Museum Senckenbergianum,' B. i, p. 235, taf. xvi, fig. 2) are the same as the *Micryphantes camelinus* of M. Koch, which is identical with *Walckenaëra acuminata*; but they differ from it, apparently, both in structure and colour; and it has already been shown (page 226) that the *Linyphia alticeps* of Professor Sundevall, included by M. Walckenaer among the synonyma of this species, is perfectly distinct from it.

WALCKENAËRA CUSPIDATA. Pl. XX, fig. 204.

Walckenaëra cuspidata, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 108.

— — Blackw., Research. in Zool., p. 320, pl. 2, fig. 11.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 273.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{5}$ th.

In colour this species bears a close resemblance to *Walckenaëra acuminata*. Its cephalo-thorax is oval, convex, and glossy, without any indentation in the medial line or marked prominence in front; the sternum is broad and heart-shaped. These parts, with the falces, maxillæ, and lip, have a dark, brownish-black hue. The legs are hairy, and have a bright-rufous tint; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is sparingly clothed with hairs, glossy, and of a deep-black hue, that of the branchial opercula being pale-yellow.

The male is rather smaller than the female, and has a minute, conical, acute prominence, surmounted by a few fine hairs, situated within the trapezoid formed by the four intermediate eyes, immediately in front of the posterior pair. The radial joint of the palpi has two apophyses at its extremity; the smaller projects on the under side, and the longer, which has a process near its base, on the outer side, curves outwards, in front of the digital joint, which is somewhat oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed and complicated in structure, with a strong spine on the outer side, curved in a circular form.

This rare spider is found under stones and on rails in the south of Lancashire, in Yorkshire, and in Denbighshire, and two females, one adult and the other immature, were taken by Mr. J. Hardy in Berwickshire, in the spring of 1849.

The *Theridion monoceros* of M. Wider is nearly allied to this species, but it presents several points of difference, both in structure and colour ('Museum Senckenbergianum,' B. 1, p. 236, taf. 16, fig. 3).

WALCKENAËRA MONOCEROS. Pl. XX, fig. 205.

Theridion monoceros, Wider, Museum Senckenb., Band i, p. 236, taf. 16, fig. 3.

Argus — Walck., Hist. Nat. des Insect. Apt., t. ii, p. 361.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{9}$ th.

The eyes are disposed in pairs on the anterior prominence of the cephalo-thorax, and are seated on black spots; those of each pair are near to each other, the lateral ones being placed on a minute tubercle in a line with the cephalo-thorax; the eyes of the posterior pair are rather the smallest of the eight, and with those of the anterior pair, which are the darkest coloured, form a narrow, oblong, quadrangular figure. The cephalo-thorax is long, oval, glossy, convex, particularly in the cephalic region, which is rather prominent and rounded; a small, conical, pointed process, slightly curved downwards, and provided with numerous short hairs, enlarged at the extremity, is situated in the space surrounded by the eyes, a little in advance of the posterior pair; the falces are small, conical, and vertical; the maxillæ are short, and strongly

inclined towards the lip, which is semicircular and prominent at the apex; and the sternum is broad and heart-shaped. These parts have a brown colour, tinged with red; the lip and anterior part of the cephalo-thorax are the darkest, and the maxillæ, which are much the palest, have a yellowish tint. The legs have a reddish-yellow hue; they are long, slender, and hairy; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are rather short, and resemble the legs in colour, with the exception of the digital joint, which has a brown hue, tinged with red; the radial is stronger than the cubital joint, and projects two apophyses from its extremity, in front; one, towards the inner side, which is large and curves outwards in front of the digital joint, has its taper extremely bifid; and the other, which is situated at its base, on the outer side, is short, pointed, and black; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a black, filiform spine, curved in a circular form, near their extremity, on the outer side, and a short, pointed one comprised within its curvature. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is clothed with short hairs, and of a dark, yellowish-brown colour, that of the branchial opercula being yellowish-white.

Adult males of this *Walckenaëra* were taken at Southport and in Portland, in the autumn of 1859, by the Rev. O. P. Cambridge.

WALCKENAËRA HARDII. Pl. XX, fig. 206.

Walckenaëra Hardii, Blackw., Annals and Mag. of Nat. Hist., second series, vol. vi, p. 340.

— — Blackw., Ibid., vol. ix, p. 273.

Length of the male, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{3}$ th.

This species, which is nearly allied to *Walckenaëra cuspidata*, has the cephalo-thorax oval, convex, glossy, prominent before, with an obtuse, conical protuberance situated in the space surrounded by the eyes, a little in advance of the posterior pair, immediately behind which there is a small tuft of hairs; the falces are powerful, conical, divergent at the extremity, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are obliquely truncated at the extremity, on the outer side, and inclined towards the lip, which is semicircular and prominent at the apex; the legs are provided with hairs; the two superior tarsal claws are curved and minutely pectinated, and the inferior one is inflected near its base. These parts have a red-brown hue, the lip being much the darkest and the legs the lightest coloured. The four intermediate eyes form a trapezoid whose anterior side is much the shortest; those of each lateral pair are placed obliquely, and are the

largest of the eight, and the anterior eyes of the trapezoid are the smallest. The palpi have a red-brown tint, the radial and digital joints being much the darkest; the humeral joint is curved towards the cephalo-thorax, and the cubital and radial joints are clavate, the latter, which is the stronger, projecting two apophyses from its extremity, the larger situated in front, and the smaller on the under side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are moderately developed, complicated in structure, with a small, curved spine, enveloped in membrane, at their extremity, and are of a dark, reddish-brown colour. The abdomen is oviform, sparingly clothed with hairs, and of a brownish-black hue, that of the branchial opercula being yellowish-brown.

In December, 1848, Mr. J. Hardy forwarded to Oakland an adult male of this species, with other specimens of *Araneidea*, which he had captured in Berwickshire.

WALCKENAËRA UNICORNIS. Pl. XX, fig. 207.

Walckenaëra unicornis, Camb., Annals and Mag. of Nat. Hist., third series, vol. vii, p. 437.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{3}{20}$ ths; length of a leg of the third pair, $\frac{1}{10}$ th.

The legs are slender, provided with hairs, and have a yellowish-red hue; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are short and resemble the legs in colour, the digital joint having a tinge of brown; the radial is larger than the cubital joint, and projects from its extremity a long, bifid apophysis, curved obliquely, in front of the digital joint, and a short, obtuse one underneath; the digital joint is somewhat oval, with a lobe on the outer side, near its base; it is convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed, prominent, complicated in structure, with a black, filiform spine at their extremity, on the outer side, which is enveloped in membrane, and curved in a circular form; these organs are of a dark, reddish-brown colour. The cephalo-thorax is oval, convex, glossy, rather prominent before, with a short, vertical prominence situated in the middle of the space surrounded by the eyes, whose summit is somewhat enlarged and slightly notched, and is of a dark-brown colour, tinged with red. The eyes are disposed on the anterior part of the cephalo-thorax, high above the frontal margin; the four intermediate ones describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a small tubercle, and are contiguous; the anterior eyes of the trapezoid are the smallest of the eight. The falces are conical, divergent at the extremity, armed with a few teeth on the inner surface, and inclined towards the sternum; the maxillæ are short, and strongly inclined towards the lip, which is semicircular and prominent at the apex. These organs are of a brownish-red colour, the base of the lip being the darkest. The sternum is heart-shaped, convex, glossy, and of a dark-brown colour, tinged with red. The

abdomen is oviform, glossy, sparingly clothed with hairs, moderately convex above, projecting over the base of the cephalo-thorax, and has a brown-black hue, that of the branchial opercula and spinners being yellowish-white.

This species, which is closely allied to *Walckenaëra cuspidata* and *Walckenaëra monoceros*, was taken at Lyndhurst, by the Rev. O. P. Cambridge, in the summer of 1860.

WALCKENAËRA OBTUSA. Pl. XX, fig. 208.

Walckenaëra obtusa, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 482.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 273.

Length of the male, $\frac{1}{7}$ th of an inch; length of the cephalo-thorax, $\frac{1}{15}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{5}{24}$ ths; length of a leg of the third pair, $\frac{1}{2}$ th.

The cephalo-thorax is oval, convex, glossy, with a slight indentation in the medial line, and the sternum is oblong heart-shaped. These parts, with the falces, maxillæ, and lip, have a dark, brownish-black hue. The legs are hairy, and have a bright-rufous tint; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour; the cubital joint is clavate, and the radial joint, which is short, terminates in three apophyses; the largest curves outwards before the digital joint, the next in size is exterior to this, and has a small, pointed process at its base, in front, and the smallest is situated underneath; the digital joint is somewhat oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a strong spine on the outer side, curved in a circular form, and are of a brownish-black colour, tinged with red. The abdomen is oviform, convex above, and projects over the base of the cephalo-thorax; it is sparingly clothed with hairs, glossy, and of a deep-black hue.

A few males of *Walckenaëra obtusa*, in a state of maturity, were discovered under stones at Oakland in February, 1835. Between the male of this species and the male of *Walckenaëra cuspidata* there is a striking resemblance; but the smaller size of the latter, the comparative shortness of its sternum, differences in the structure of its palpi, and especially the acute, conical prominence situated within the trapezoid formed by the four intermediate eyes, effectually serve to distinguish it from the former.

WALCKENAËRA FUSCIPES. Pl. XX, fig. 209.

Walckenaëra fuscipes, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii, p. 481.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 273.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{30}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{32}$ nd; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The cephalo-thorax is oval, convex, glossy, with a slight indentation in the medial line; the anterior part, which is prominent and acute, is compressed, and deeply indented on the sides, and has a slight indentation above; in front it is divided into two segments by a transverse groove; the falces are conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the legs are provided with hairs; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. These parts, with the maxillæ and lip, are of a brown colour. The eyes are distributed in pairs on the anterior prominence of the cephalo-thorax; one pair is situated on the summit of its superior segment, and another on a small protuberance on the upper part of the inferior segment, in front; these eyes describe a narrow trapezoid, whose anterior side is the shortest; the two other pairs are seated on the sides of the frontal prominence, and the eyes constituting each are contiguous. The palpi have a brown tint, the radial and digital joints being much the darkest; the radial joint terminates in two apophyses; one, which is large, depressed, and hairy, overlaps the base of the digital joint, and the other, which is small, projects on the inner side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, not very complex in structure, and of a brown colour, tinged with red. The abdomen is oviform, convex above, and projects over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; that of the branchial opercula being pale-yellow.

Adult males of this species were found under stones at Oakland, in March, 1835.

WALCKENAËRA PUNCTATA. Pl. XX, fig. 210.

Walckenaëra punctata, Blackw., Linn. Trans., vol. xviii, p. 629.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 274.

Argus trapezoïdes, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 503.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{30}$ th, breadth, $\frac{1}{34}$ th;

breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{7}$ th; length of a leg of the third pair, $\frac{1}{9}$ th.

The eyes of the lateral pairs are the largest, and the two anterior ones of the four forming the trapezoid are much the smallest of the eight. The cephalo-thorax is oval, convex, glossy, prominent before, with numerous strongly marked punctures on the margins, from which rows of punctures converge towards an indentation in the medial line; the falces are moderately strong, conical, armed with a few teeth on the inner surface, and inclined towards the sternum, which is broad, heart-shaped, and thickly marked with punctures; the maxillæ incline towards the lip, which is semicircular and prominent at the apex. These parts are of a very dark-brown colour, the falces and maxillæ having a tinge of red. The legs and palpi are slender, provided with hairs, and of a red colour. Each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is sparingly clothed with hairs, glossy, and has a black hue; the sexual organs are rather prominent, and of a reddish-brown colour; that of the branchial opercula being dull-yellow.

The male is smaller than the female, but it resembles her in colour. Each falx has two contiguous, acute, toothlike processes near its extremity, towards the inner side. The radial joint of the palpi is stronger than the cubital joint, and projects two pointed apophyses from its extremity, in front, the superior one being much the more prominent; the digital joint has a short oval form; it is convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, not very complex in structure, rather prominent, and of a red-brown colour. The anterior part of the cephalo-thorax is prominent, with an oblong indentation directed backwards from each lateral pair of eyes.

M. Walckenaer, in disposing of *Walckenaëra punctata* as a synonym of *Argus trapezoides*, refers to his 'Hist. Nat. des Insect. Apt.' tom. ii, p. 353, for an account of the latter; but as no species bearing that name appears to be included in the volume, it must suffice to direct attention to the error.

Females of this spider were taken in May, 1838, under stones in a moist pasture near Llanrwst; and, in the summer of 1854, Mr. R. H. Meade captured an individual of the same sex at Hornsea, near the east coast of Yorkshire. An adult male has since been found under a stone in a wood near Hendre House.

WALCKENAËRA PARALLELA. Pl. XX, fig. 211.

Theridion parallelum, Wider, Museum Senckenb., Band i, p. 234, taf. 16, fig. 1.

Argus parallelus, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 366.

Length of the female, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{30}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{34}$ th; length of a posterior leg, $\frac{1}{14}$ th; length of a leg of the third pair, $\frac{1}{16}$ th.

The cephalo-thorax is oval, convex, glossy, depressed at the base, prominent in the cephalic region, and marked with numerous minute punctures, forming rows which converge from the lateral margins towards the middle; the falces are small, conical, and vertical; the maxillæ are strongly inclined towards the lip, which is semicircular and prominent at the apex; and the sternum is broad, heart-shaped, convex, glossy, and marked with minute punctures, particularly on the sides. These parts are of a dark-brown colour, the falces and maxillæ being the palest. The legs are provided with hairs, and have a yellow-red hue; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base. The palpi are short, and somewhat paler than the legs. The eyes, which are nearly equal in size, are disposed on the anterior part of the cephalo-thorax, high above the frontal margin; the four intermediate ones form an elongated trapezoid, the two anterior ones, constituting its shortest side, being rather the smallest of the eight; and those of each lateral pair are seated obliquely on a small tubercle, and are almost in contact. The abdomen is oviform, somewhat pointed at the spinners, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with short hairs, marked with numerous minute punctures, and has four conspicuous, indented spots disposed in pairs on the upper part, of which the two posterior ones are the largest and widest apart; its colour is brown-black, and that of the branchial opercula is dark-brown.

The sexes resemble each other in colour, but the male, which is the smaller, has the cephalic region much more prominent than the female; it has a narrow indentation directed backwards from each lateral pair of eyes, and is divided into two lobes by a transverse furrow in front; the posterior intermediate eyes are seated transversely on the superior lobe, and the other six on the inferior lobe, a marked protuberance occurring between the anterior intermediate pair and the frontal margin. The palpi are of a brown colour; the cubital is larger than the radial joint, and the latter projects a long, straight, pointed apophysis from its extremity, in front, and a minute one on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, rather prominent, complex in structure, with a curved, filiform spine, and some delicate membrane at their extremity, and are of a dark-brown colour.

Adult individuals of both sexes of this species were taken in Portland, by the Rev. O. P. Cambridge, in the autumn of 1859.

WALCKENAËRA OBSCURA. Pl. XX, fig. 212.

Walckenaëra obscura, Blackw., Research. in Zool., p. 321.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 274.

Length of the male, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{11}$ th; length of a leg of the third pair, $\frac{1}{13}$ th.

The cephalo-thorax is oval, convex, and glossy; it is prominent before, where the eyes are seated, and, with the falces, maxillæ, lip and sternum, is of a brownish-black colour. The legs have a red-brown hue; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour; the cubital and radial joints are short, and the latter, which is the stronger, has two small apophyses at its extremity, one situated in front, and the other on the outer side; the digital joint is somewhat oval, with a bold, conical protuberance in the middle; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a short, curved spine at their base, on the outer side, a long filiform one underneath, which curves downwards to their extremity, where there is a pointed spine curved outwards, and are of a red-brown colour. The abdomen is oviform, convex above, and projects over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue.

Several males of this species, having the palpal organs fully developed, were obtained on iron rails at Crumpsall Hall in April, 1834, and on plants growing in woods at Oakland, in June, 1835.

WALCKENAËRA FLAVIPES. Pl. XX, fig. 213.

Walckenaëra flavipes, Blackw., Research. in Zool., p. 322.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 274.

Length of the female, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{28}$ th, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{26}$ th; length of an anterior leg, $\frac{1}{11}$ th; length of a leg of the third pair, $\frac{1}{13}$ th.

The cephalo-thorax is oval, convex, glossy, with a minute indentation in the medial line; and the falces are inclined towards the sternum, which is broad and heart-shaped. These parts, with the maxillæ and lip, have a dark, brownish-black hue. The legs and palpi are provided with hairs, and are of a dull-yellow colour, faintly tinged with red. Each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is sparingly clothed with hairs, glossy, and of a black hue.

The male has an obtuse prominence on the anterior part of the cephalo-thorax, on each side of which there is a large indentation, directed backwards from the lateral eyes. The radial joint of the palpi is longer than the cubital and tapers to the extremity, which is greatly curved outwards, in front of the digital joint; this latter joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a slightly curved spine projecting in front from within the curvature of the radial joint, and another, almost describing a circle, situated at their extremity; they are of a red-brown colour.

In May, 1834, an adult male *Walckenaëra flavipes* was captured under the exfoliating bark of a sycamore at Crumpsall Hall, and in the spring of 1840 both sexes were met with under stones imbedded in the earth in a pasture at Oakland.

WALCKENAËRA TURGIDA. Pl. XX, fig. 214.

Walckenaëra turgida, Blackw., Linn. Trans., vol. xviii, p. 630.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 274.

Length of the female, $\frac{1}{13}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{32}$ nd; length of an anterior leg, $\frac{1}{11}$ th; length of a leg of the third pair, $\frac{1}{13}$ th.

The legs and palpi are robust, provided with hairs, and of a reddish-brown colour. Each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The cephalo-thorax is oval, convex, glossy, slightly prominent behind the eyes, with a small indentation in the medial line, and is of a dark-brown colour. The falces are moderately strong, armed with teeth on the inner surface, inclined towards the sternum, and of a dark-brown hue, slightly tinged with red. The maxillæ are somewhat lighter coloured than the falces. The sternum is broad, heart-shaped, convex, and, with the lip, has a dark-brown tint. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, and of a brown colour obscurely mottled with darker brown; that of the branchial opercula being pale, yellowish-brown.

The male is darker coloured than the female, and has a strong prominence on the anterior part of the cephalo-thorax, which is deeply indented on the sides. On this prominence the eyes are seated, and immediately before each eye of the superior pair there is a large, obtuse protuberance. The radial joint of the palpi is rather larger than the cubital, and projects a strong, bifid apophysis in front, having the process on the inner side longer and more pointed than that on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a fine, curved spine at the extremity, and are of a red-brown colour.

Specimens of this spider were discovered in the autumn of 1836 under stones and blocks of wood in the plantations at Crumpsall Hall.

A suspicion is expressed by M. Walckenaer that *Walckenaëra turgida* may be identical with *Argus parallelus* ('Hist. Nat. des Insect. Apt.,' tom. iv, p. 508); but the males of these species exhibit differences in the form of the anterior part of the cephalo-thorax and in the disposition of the eyes.

WALCKENAËRA ATRA. Pl. XXI, fig. 215.

Walckenaëra atra, Blackw., Linn. Trans., vol. xviii, p. 631.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 274.

Argus ater, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 508.

Length of the female, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{32}$ nd, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{14}$ th; length of a leg of the third pair, $\frac{1}{20}$ th.

The two anterior eyes of the four intermediate ones forming the trapezoid are the smallest of the eight. The cephalo-thorax is oval, convex, glossy, depressed on the sides, which are marked with slight furrows converging towards an indentation in the medial line. The falces are moderately strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped. The maxillæ incline towards the lip, which is semicircular and prominent at the apex. The legs are provided with hairs; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The abdomen is oviform, thinly clothed with hairs, glossy, convex above, and projects over the base of the cephalo-thorax. The colour of this spider is black, with the exception of the falces, maxillæ, legs and palpi, which are brown, the first two being much the darkest.

The male is rather smaller than the female, and the anterior part of its cephalo-thorax, where the eyes are situated, is prominent but obtuse, with an oblong indentation on each side, extending backwards from the lateral eyes. The cubital and radial joints of its palpi are short, the latter being much the stronger; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a long, black, very prominent, curved, filiform spine, enveloped in membrane, originating about the middle of the outer side, and a short, straight, pointed one at their extremity; their colour is reddish-brown.

Both sexes of *Walckenaëra atra*, the males having the palpal organs in a perfect state of development, were found in May, 1838, under stones in a moist pasture near Llanrwst.

In the 'Transactions of the Linnean Society,' vol. xviii, p. 632, a conjecture is advanced that this species may be the same as the *Theridion acuminatum* of M. Wider (Museum Senckenbergianum, B. 1, p. 232, taf. 15, fig. 11); but well-marked differences in size, structure, and colour, plainly show that they are distinct; and a comparison made between *Walckenaëra atra* and *Argus bicuspidatus*, as suggested by M. Walckenaer in his 'Hist. Nat. des Insect. Apt.' tom. iv, p. 508, has been attended with a similar result.

WALCKENAËRA AGGERIS. Pl. XXI, fig. 216.

Walckenaëra aggeris, Cambridge, Annals and Mag. of Nat. Hist., third series, vol. v, p. 173.

Length of the female, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{48}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The eyes, which are nearly equal in size, are disposed on the anterior part of the cephalo-thorax, high above the frontal margin; the four intermediate ones form a narrow, elongated trapezoid, whose anterior side is the shortest; and those of each lateral pair are seated obliquely on a minute tubercle, and are contiguous. The cephalo-thorax is long, oval, convex, somewhat glossy, without an indentation in the medial line, and has an oblong, vertical space between the posterior and anterior intermediate pairs of eyes clothed with short hairs; the falces are small, conical, vertical, and armed with teeth on the inner surface; the maxillæ are greatly inclined towards the lip, which is semicircular and prominent at the apex; and the sternum is broad, convex, and heart-shaped. These parts are of a dark-brown hue, the falces and maxillæ being much the palest. The legs are slender, provided with hairs, and of a yellowish-red colour, being paler at the articulation of the joints; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi are short and resemble the legs in colour. The abdomen, which has a black hue, is oviform, glossy, sparingly clothed with hairs, convex above, and projects over the base of the cephalo-thorax.

The sexes are similar in colour, but the male, which is rather the smaller, has an indentation directed backwards from each lateral pair of eyes, and the oblong, vertical space between the two intermediate pairs of eyes forming the trapezoid is densely covered with short hairs. Its palpi are of a yellowish-red hue, with the exception of the digital joint and the extremity of the radial joint, which have a brownish tint; the humeral joint is curved towards the cephalo-thorax, and the radial, which is stronger than the cubital joint, is produced at its extremity, in front, and has an acute apophysis on its outer side; the digital joint is oval, with a small lobe near its extremity, on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, and of a reddish-brown colour.

Males and females of this spider were captured at Southport, in the summer of 1859, by the Rev. O. P. Cambridge.

WALCKENAËRA HIEMALIS. Pl. XXI, fig. 217.

Walckenaëra hiemalis, Blackw., Linn. Trans., vol. xviii, p. 632.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 464.

Length of the female, $\frac{1}{13}$ th of an inch; length of the cephalo-thorax, $\frac{1}{27}$ th, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{32}$ nd; length of an anterior leg, $\frac{1}{11}$ th; length of a leg of the third pair, $\frac{1}{14}$ th.

The cephalo-thorax is oval, convex, glossy, rather prominent in front, where the eyes are situated, depressed in the posterior region, with a small indentation in the medial line; the falces are moderately strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped. These parts, with the maxillæ and lip, have a brownish-black hue, the falces and maxillæ being rather the palest. The legs and palpi are of a red-brown colour. The two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a black hue, that of the branchial opercula being brown; the sexual organs are prominent.

The male is rather smaller than the female. The anterior part of its cephalo-thorax is prominent, and there is a large indentation behind each lateral pair of eyes. The radial joint of the palpi has a brown-black tint; it is much larger than the cubital joint, depressed and hairy, overlapping the base of the digital joint, and is curved outwards at its extremity, immediately above which, on the outer side, there is a curved, pointed spine, with a process at its base; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; they are highly developed, complicated in structure, with several curved, pointed spines at their extremity, and are of a reddish-brown colour.

Numerous individuals of this species were observed running actively on rails in meadows and pastures near Llanrwst in December, 1836, and January, 1837.

In his 'Histoire Naturelle des Insectes Aptères,' tom. iv, p. 510, M. Walckenaer has added *Walckenaëra hiemalis* to the synonyma of *Argus cucullatus*, from which it differs in size, colour, and organization. In the form of the anterior part of the cephalo-thorax and in the disposition of the eyes, the males of these spiders are very dissimilar.

WALCKENAËRA BIFRONS. Pl. XXI, fig. 218.

Walckenaëra bifrons, Blackw., Linn. Trans., vol. xviii, p. 634.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 464.

Argus — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 510.

Length of the male, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{34}$ th, breadth, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{28}$ th; length of an anterior leg, $\frac{1}{9}$ th; length of a leg of the third pair, $\frac{1}{16}$ th.

On the anterior part of the cephalo-thorax, which is compressed, there is a large, perpendicular, obtuse prominence, divided into two lobes at the summit by a longitudinal furrow; the posterior part is depressed, and the frontal margin is very prominent; the falces are small, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex. These parts have a dark-brown tint, the lip and frontal prominence of the cephalo-thorax being the darkest. The legs are provided with hairs, and have a yellowish-red hue; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. Four eyes, situated on the anterior part of the frontal prominence, form a square; the two superior ones are seated on a minute tubercle, and the inferior ones are the smallest of the eight; the other four are disposed in pairs on the sides of the prominence, near the front, those of each pair being contiguous. The palpi resemble the legs in colour; the radial joint, which is much shorter than the cubital, projects a small, slightly curved apophysis from its extremity, on the outer side; the digital joint is oval, convex and hairy externally, with an indentation at its base, on the outer side; it is concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a curved, black spine at the extremity, enveloped in membrane, and are of a reddish-brown hue. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a dark-brown colour, that of the branchial opercula being dull-yellow.

Mr. T. Glover captured an adult male of this rare spider in June, 1838, among coarse herbage in Gwydyr Wood, near Bettws y Coed, Caernarvonshire.

WALCKENAËRA BICOLOR.

Walckenaëra bicolor, Blackw., Linn. Trans., vol. xviii, p. 635.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 464.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{32}$ nd, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{32}$ nd; length of an anterior leg, $\frac{1}{11}$ th; length of a leg of the third pair, $\frac{1}{16}$ th.

The cephalo-thorax is oval, convex, glossy, prominent but obtuse before, with an indentation immediately behind each lateral pair of eyes, and a slight one in the medial line; the falces are conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the legs and palpi are moderately robust, and are provided with hairs. These parts, with the maxillæ and lip, have a brown hue, the lip being the darkest

and the legs the lightest coloured. The two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The cubital and radial joints of the palpi are short, the latter being much the stronger; the digital joint is oval, with a projection on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a slender process at the base, directed upwards, a bold protuberance on the inner side, and a fine, convoluted, filiform spine, enveloped in membrane, extending from the upper part to the extremity; their colour is red-brown. The abdomen is oviform, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; it is of a brownish-black colour, and that of the branchial opercula is pale-yellow.

M. Walckenaer is of opinion that *Walckenaëra bicolor* should rank as a synonym of *Argus elongatus* (Hist. Nat. des Insect. Apt., t. iv, p. 509); but they may be readily distinguished from each other by differences in size, structure, and colour.

Males of this species, with the palpal organs fully developed, were taken in July, 1836, on rails near Llanrwst.

WALCKENAËRA PARVA. Pl. XXI, fig. 219.

Walckenaëra parva, Blackw. Linn. Trans., vol. xviii, p. 635.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 465.

Argus parvus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 508.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{32}$ nd, breadth, $\frac{1}{48}$ th; breadth of the abdomen, $\frac{1}{40}$ th; length of an anterior leg, $\frac{1}{15}$ th; length of a leg of the third pair, $\frac{1}{20}$ th.

The cephalo-thorax is oval, glossy, very convex behind the eyes, depressed in the posterior region, with an exceedingly minute indentation in the medial line; the falces are moderately powerful, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped and glossy; the maxillæ are strong, and inclined towards the lip, which is semicircular and prominent at the apex. These parts, with the legs and palpi, are of a brown colour, the falces, lip, and margins of the cephalo-thorax being the darkest. The two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a very dark, brown-black hue, that of the branchial opercula being brown.

The male, though smaller than the female, resembles her in colour; but it differs from her in having an indentation on each side of the anterior part of the cephalo-thorax, immediately behind the lateral eyes. The radial joint of the palpi, which is rather shorter and stronger than the cubital, projects an acute, prominent apophysis from its extremity, in front; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs,

which are moderately developed, not complicated in structure, somewhat prominent, and of a red-brown colour.

In December, 1836, and January, 1837, this minute spider was seen in considerable numbers on rails near Llanrwst.

WALCKENAËRA EXILIS. Pl. XXI, fig. 220.

Walckenaëra exilis, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xi, p. 24.

— — Blackw., Ibid., p. 120.

Length of the male, $\frac{1}{30}$ th of an inch; length of the cephalo-thorax, $\frac{1}{30}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{12}$ th; length of a leg of the third pair, $\frac{1}{20}$ th.

The eyes are seated on black spots; the four intermediate ones describe a narrow, oblong trapezoid, whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a small tubercle and are contiguous; the lateral eyes are the largest, and the two anterior ones of the trapezoid are much the smallest of the eight. The cephalo-thorax is oval, convex, glossy, prominent before, depressed in the posterior region, with a narrow indentation directed backwards from each lateral pair of eyes, and is of a dark-brown colour. The falces are small, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is heart-shaped; the maxillæ are enlarged where the palpi are inserted, and inclined towards the lip, which is semicircular and prominent at the apex; the legs are moderately long and hairy; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. These parts are of a pale-brown hue, the falces and lip being the darkest, and the sternum having a slight tinge of green. The palpi resemble the legs in colour, with the exception of the radial and digital joints, which have a dark-brown tint; the radial is stronger than the cubital joint, and projects two pointed apophyses from its extremity, in front; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, very prominent, complicated in structure, with a short, curved, black, projecting spine at their extremity, and are of a brown colour, tinged with red. The abdomen is small, oviform, hairy, convex above, projecting over the base of the cephalo-thorax; it is of a yellowish-brown colour, with obscure marks of a deeper shade.

A specimen of this diminutive *Walckenaëra*, in a state of maturity, was discovered among moss growing at the root of an oak in a wood on the northern slope of Gallt y Rhyg in October, 1852.

WALCKENAËRA DEPRESSA. Pl. XXI, fig. 221.

Walckenaëra depressa, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. viii,
p. 482.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix,
p. 465.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{20}$ th; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The abdomen is broad and oviform, but depressed, and somewhat pointed at the spinners; it projects over the base of the cephalo-thorax, is thinly clothed with hairs, glossy, and of a brownish-black hue, that of the branchial opercula being dark-brown. The cephalo-thorax has a short oval form; it is glossy, convex, prominent but obtuse before, where the eyes are situated, depressed in the posterior region, and without an indentation in the medial line; the falces are moderately strong, conical, and slightly inclined towards the sternum, which is broad and heart-shaped. These parts, with the maxillæ, lip, legs, and palpi, are of a dark-brown colour, the cephalo-thorax, sternum, and lip being much the darkest, and the legs and palpi having a tinge of red. The two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The cephalo-thorax, sternum, and abdomen, are marked with minute punctures.

The male is smaller than the female, but it closely resembles her in colour. The cubital and radial joints of its palpi are short; the latter is the larger, and has two small apophyses at its extremity, in front; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a curved process at the extremity projecting beyond the end of the joint, and are of a dark, red-brown colour.

Adult males of *Walckenaëra depressa* were detected under stones in a wood at Oakland in April, 1835, and in June, 1837, both sexes were procured in the same locality. It occurs also in Berwickshire, in which county Mr. J. Hardy took an adult female in 1858.

WALCKENAËRA PRATENSIS. Pl. XXI, fig. 222.

Walckenaëra pratensis, Blackw., Annals and Mag. of Nat. Hist., third series, vol. viii,
p. 445.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of a posterior leg, $\frac{1}{6}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The eyes are disposed on the anterior part of the cephalo-thorax in two transverse rows;

the four intermediate ones describe a trapezoid, the two anterior ones, which are the smallest of the eight, forming its shortest side; the eyes of each lateral pair are seated obliquely on a tubercle, and are contiguous. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides converging towards an indentation in the medial line; the lip is semicircular and prominent at the apex; and the sternum is broad, heart-shaped, convex, and glossy. These parts are of a very dark-brown colour, tinged with red, the lateral margins of the cephalo-thorax being the darkest. The falces are conical, inclined towards the sternum, and armed with teeth on the inner surface; and the maxillæ are enlarged where the palpi are inserted, and inclined towards the lip. These organs have a brown-red hue. The legs and palpi are provided with hairs, and are of a yellowish-red colour; the fourth pair of legs is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slender, and the inferior one is inflected near its base. The abdomen is oviform, glossy, convex above, and projects over the base of the cephalo-thorax; it is thinly clothed with short hairs, and has a black hue; the sexual organs are minute, and of a reddish-brown colour, that of the branchial opercula being pale-yellow.

The sexes are similar in colour, but the male, which is rather the smaller, has the anterior part of the cephalo-thorax more elevated, and has a narrow indentation directed backwards from each lateral pair of eyes. Its palpi are short, and the radial and digital joints have a dark-brown hue; the humeral joint is curved towards the cephalo-thorax, and the radial, which is stronger than the cubital joint, has a small, curved, pointed apophysis at its extremity, in front, towards the inner side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a black, filiform spine at their extremity, on the outer side; this spine is curved in a circular form, and within the curvature there is a prominent, pointed, slightly curved spine, at the base of which there is some whitish membrane; the colour of these organs is dark-brown, faintly tinged with red.

Females of this species, in a state of complete development, have been found on several occasions among herbage growing in meadows and old pastures near Hendre House; and in May, 1860, the Rev. O. P. Cambridge took adult individuals of both sexes on the banks of the Conway.

WALCKENAËRA HUMILIS. Pl. XXI, fig. 223.

Walckenaëra humilis, Blackw., Linn. Trans., vol. xviii, p. 636.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 465.

Argus — Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 506.

Length of the female, $\frac{1}{18}$ th of an inch; length of the cephalo-thorax, $\frac{1}{20}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{30}$ th; length of an anterior leg, $\frac{1}{12}$ th; length of a leg of the third pair, $\frac{1}{14}$ th.

The cephalo-thorax is oval, glossy, convex behind the eyes, depressed in the posterior

region, with an indentation in the medial line; the falces are moderately strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad, heart-shaped, convex, and glossy. These parts, with the maxillæ and lip, have a brown-black tint, the falces and maxillæ being the brownest. The legs and palpi are robust, provided with hairs and a few fine spines, and are of a red-brown colour. The anterior and posterior pairs of legs, which are the longest, are equal in length, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The abdomen is oviform, convex above, projecting over the base of the cephalothorax; it is thinly clothed with hairs, and has a brownish-black hue, that of the branchial opercula being very dark-brown.

The male is rather darker coloured than the female, and the anterior part of its cephalothorax, which is prominent and truncated, has numerous short hairs on its summit. On this summit the eyes are distributed; one pair, situated on its posterior part, forms with another on its anterior margin an elongated trapezoid whose anterior side is considerably the shortest, and the two other pairs are disposed on the lateral margins, the eyes constituting each being contiguous; the anterior eyes of the trapezoid are much the smallest of the eight. The sexes differ also in the relative length of their legs, the posterior pair of the male surpassing the anterior pair a little in longitudinal extent. The palpi have a dark hue; the humeral joint is clavate, and has a small, pointed apophysis at the base, on the inner side; the cubital and radial joints are moderately long; the latter projects a large apophysis from its extremity, which curves outwards and rather upwards in front of the digital joint; it is somewhat enlarged at its termination and has a pointed process on the convex side; a small, obtuse apophysis occurs also on the under side of the joint; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, very prominent, complicated in structure, with a strong, curved, black spine at the base, and a fine, convoluted one on the outer side, near the extremity, contiguous to which, on the under side, there is a slightly curved, pointed, projecting process; the colour of these organs is red-brown.

Several specimens of this spider were found in October, 1836, under slates in the garden belonging to Thomas Warner, Esq., of Crumpsall Green, near Manchester; others were observed afterwards on rails at Crumpsall Hall; and in 1840 Miss Ellen Clayton met with males and females of this species near Garstang in Lancashire.

WALCKENAËRA VAFRA.

Walckenaëra vafra, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xvii, p. 235.

— — Blackw., Ibid., vol. xx, p. 502.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalothorax, $\frac{1}{10}$ th, breadth, $\frac{1}{20}$ nd; breadth of the abdomen, $\frac{1}{20}$ nd; length of a posterior leg, $\frac{5}{24}$ ths; length of a leg of the third pair, $\frac{3}{20}$ ths.

The legs are long, slender, hairy, and have a bright, yellowish-red hue; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, but the radial and digital joints are tinged with brown; the cubital joint is clavate; the radial joint projects two apophyses from its extremity; one, on the inner side, is large, pointed, curved outwards in front of the digital joint, and has near its base a minute process on the convex side, and a large obtuse one on the opposite side; the other apophysis, which is smaller and obtuse, is situated underneath; the digital joint is somewhat oval, convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complicated in structure, with two long, filiform, contiguous black spines enveloped in membrane, originating near the middle, and curved in a circular form on the outer side; a shorter one, also originating near the middle, and enveloped in membrane, is curved obliquely downwards, and their prevailing colour is brownish-red. The convex sides of the digital joints are directed towards each other. The cephalo-thorax is oval, convex, glossy, with a strong, vertical prominence before, which is somewhat compressed on the sides and surmounted by a few hairs; the falces are small, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad, glossy, and heart-shaped; the maxillæ are powerful, and curved towards the lip, which is semicircular and prominent at the apex. These parts are of a brownish-red colour, with the exception of the anterior prominence of the cephalo-thorax, which has a dark-brown hue, tinged with red. The eyes are seated on the anterior part of the cephalo-thorax, two on the summit of the vertical prominence, and the other six at its base, in front, each lateral pair being placed obliquely. The abdomen is oviform, convex above, and projects over the base of the cephalo-thorax; it is sparingly clothed with hairs, glossy, and of a brownish-black colour, that of the branchial opercula being pale, yellowish-white.

Adult males of this species were discovered under stones in the woods about Hendre House, near Llanrwst, in October, 1855.

WALCKENAËRA CRISTATA. Pl. XXI, fig. 224.

Walckenaëra cristata, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 107.

— — Blackw., Research. in Zool., p. 317, pl. 2, figs. 7—10.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 465.

Theridion bicornis, Wider, Museum Senckenb., Band i, p. 220, taf. 14, fig. 12.

Micryphantes cæspitum, Koch, Uebers des Arachn. Syst., erstes Heft, p. 12.

— — Koch, Die Arachn., Band viii, p. 104, tab. 281, figs. 673, 674.

Argus bicornis, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 365.

Length of the female, $\frac{1}{11}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{34}$ nd;

breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{11}$ th.

The cephalo-thorax is oval, convex, glossy, prominent before, with a minute indentation in the medial line; the sternum is broad and heart-shaped; the falces are moderately strong, conical, vertical, and armed with teeth on the inner surface. These parts, with the maxillæ and lip, have a brownish-black tint, the maxillæ being the brownest. The legs are of a red-brown colour; the anterior and posterior pairs, which are the longest, are equal in length, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is sparingly clothed with hairs, glossy, and of a black hue, that of the branchial opercula and spinners being dull, yellowish-brown.

In external structure the male differs from the female in several particulars; its posterior is longer than its anterior pair of legs, and the anterior prominence of its cephalo-thorax, which is more elevated, is divided into two segments at its summit by a deep, transverse groove, each segment being surmounted by a tuft of fine hairs inclined towards the groove and forming a crest. One pair of eyes is seated on the hinder part of the posterior segment, near its summit, and another pair is situated near the summit of the anterior segment, in front, describing with the former an elongated trapezoid, whose shortest side is before; the other eyes are disposed in pairs on the sides of the frontal prominence, and are contiguous; the eyes of each lateral pair are the largest, and those of the anterior pair of the trapezoid are the smallest of the eight. The cubital joint of the palpi is clavate, and the radial joint has two apophyses at its extremity; the larger terminates in a point curved outwards in front of the digital joint, and the smaller projects underneath; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, with several curved, spine-like processes, and are of a dark, red-brown colour.

Mr. Thomas Blackwall discovered this species in October, 1832, under stones and on rails in the neighbourhood of Manchester. It has since been met with in similar situations near Llanrwst, and has also been taken near Bradford in Yorkshire by Mr. R. H. Meade.

WALCKENAËRA ANTICA. Pl. XXI, fig. 225.

Walckenaëra antica, Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 465.

— *apicata*, Blackw., Linn. Trans., vol. xviii, p. 637.

Theridion anticum, Wider, Museum Senckenb., Band i, p. 221, taf. 15, fig. 1.

Micryphantes tibialis, Koch, Die Arachn., Band iii, p. 47, tab. 89, fig. 203; and Band viii, p. 107, tab. 282, fig. 675.

Argus anticus, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 357.

— *apicatus*, Walck., Ibid., tom. iv, p. 509.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{32}$ nd;

breadth of the abdomen, $\frac{1}{4}$ th; length of a posterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The legs are provided with hairs, and a few fine, erect spines, and are of a red-brown colour, with the exception of the tibiæ of the first and second pairs, which have a dark-brown tint; the fourth pair is rather the longest, then the first, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The colour of the palpi is dark-brown. The cephalo-thorax is oval, convex, glossy, with slight furrows on the sides, and a minute indentation in the medial line; the falces are moderately strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad, convex, and heart-shaped. These parts, with the lip, have a brownish-black tint, and that of the maxillæ is reddish-brown. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue; the sexual organs are rather prominent, and the colour of the branchial opercula is yellow.

The male resembles the female in colour, and in the relative length of its legs. The anterior part of its cephalo-thorax is prominent, and divided into two segments by a transverse groove in front; the posterior segment is the larger, and has a pair of eyes seated on its summit, which is obtuse and rounded; the anterior segment is surmounted by a small, conical eminence, near the apex of which, in front, there are two minute processes curved upwards; at the base of this cone, immediately below the curved processes, the smallest pair of eyes is situated, the two lateral pairs being placed on the sides of the anterior segment. The radial joint of the palpi is larger than the cubital, and consists of three parts; one situated in front, which is broad, and round at the extremity; a smaller one underneath of a similar form; and a long, slender one on the inner side, which passes obliquely before the digital joint; this joint is somewhat oval, with a prominent lobe on the outer side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a fine spine at their extremity, enveloped in membrane, and curved in a circular form; they are of a reddish-brown colour.

As the *Argus anticus* and *Argus apicatus* of M. Wackenaer are the same, and are identical with *Walckenaëra antica*, they are included among the synonyma of that species, which was observed on rails near Llanrwst, in November, 1837, and again in May, 1838.

WALCKENAËRA SAXICOLA. Pl. XXI, fig. 226.

Walckenaëra saxicola, Camb., Annals and Mag. of Nat. Hist., third series, vol. vii, p. 440.

Length of the female, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{24}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{32}$ nd; length of a posterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{14}$ th.

The legs are slender, and provided with hairs; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base; the palpi are short; the falces are conical, armed with a few teeth on the inner surface, and inclined towards the sternum. These parts are of a yellow-brown colour, the legs, which are the palest, having the tibiæ of the first and second pairs of a dark-brown hue. The cephalo-thorax is compressed before, rounded on the sides, convex, particularly in the cephalic region, glossy, and has an indentation in the medial line; the maxillæ are short, obliquely truncated at the extremity, on the outer side, and inclined towards the lip, which is semi-circular and prominent at the apex; and the sternum is broad, convex, glossy, and heart-shaped. These parts are of a dark-brown colour, the sternum and lip being the darkest, and the maxillæ the palest. The eyes are disposed on the anterior part of the cephalo-thorax; the four intermediate ones describe a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a minute tubercle, and are contiguous; the anterior eyes of the trapezoid are the smallest of the eight. The abdomen is oviform, thinly clothed with hairs, glossy, convex above, projecting over the base of the cephalo-thorax, and is of a brown-black hue; the sexual organs are highly developed and prominent.

The sexes are similar in colour, but the male is rather smaller than the female, and the anterior part of its cephalo-thorax is more convex. The radial joint of its palpi is much stronger than the cubital, and projects from its extremity, on the inner side, a long, slender apophysis curved outwards in front of the digital joint, a strong, crescent-shaped one in front, towards the outer side, and a short, obtuse one underneath; the digital joint is somewhat oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complex in structure, with a black, filiform spine near the middle, curved in a circular form, and within the curvature, a black spine enveloped in membrane, and directed obliquely forwards and downwards; these organs have a red-brown colour.

Specimens of this active species, which resembles *Walckenaëra antica* in having the tibiæ of the first and second pairs of legs of a dark-brown colour, but differs from it widely in other particulars, were taken under pieces of rock and stone in Portland, by the Rev. O. P. Cambridge, in the summer of 1860.

WALCKENAËRA PUMILA. Pl. XXI, fig. 227.

Walckenaëra pumila, Blackw., Linn. Trans., vol. xviii, p. 639.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 466.

Argus pumilus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 508.

Length of the female, $\frac{1}{13}$ th of an inch; length of the cephalo-thorax, $\frac{1}{28}$ th, breadth, $\frac{1}{36}$ th; breadth of the abdomen, $\frac{1}{28}$ th; length of a posterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The four intermediate eyes form a trapezoid whose shortest side is before; the other four, disposed in pairs on the sides of the anterior part of the cephalo-thorax, are the largest, and the two anterior ones of the trapezoid the smallest of the eight. The cephalo-thorax is oval, glossy, depressed on the sides, which are marked with slight furrows converging towards an indentation in the medial line; the falces are moderately strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex. These parts are of a dark-brown colour, the falces and maxillæ being the palest. The legs are moderately robust, provided with hairs and some erect spines, and have a reddish-brown tint; the fourth pair is rather the longest, then the first, which a little surpasses the second, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a black hue, that of the branchial opercula being dull-yellow.

The male is rather smaller than the female, but it resembles her in colour and in the relative length of its legs. The anterior part of its cephalo-thorax is prominent but obtuse, with an oblong indentation on each side, extending backwards from the lateral eyes. The cubital and radial joints of the palpi are short; the latter is elongated at its extremity, on the inner side, and projects a short, pointed apophysis in front; the digital joint has a dark-brown tint; it is very broad and crescent-shaped at the extremity, narrow and prominent at the base, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a long, curved, filiform spine, originating in a protuberance near the extremity of the inner limb of the crescent, and a straight, pointed spine, contiguous to some prominent, transparent membrane, near the extremity of the outer limb; these organs are of a dark-brown colour, tinged with red.

Both sexes of this spider secrete themselves under stones in moist pastures near Llanrwst. The male, which has been taken in Berwickshire by Mr. J. Hardy, has the palpal organs developed in May.

WALCKENAËRA PICINA. Pl. XXI, fig. 228.

Walckenaëra picina, Blackw., Linn. Trans., vol. xviii, p. 640.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 466.

Argus picinus, Walck., Hist. Nat. des Insect. Apt., tom. iv, p. 507.

Length of the male, $\frac{1}{14}$ th of an inch; length of the cephalo-thorax, $\frac{1}{28}$ th, breadth, $\frac{1}{32}$ nd; breadth of the abdomen, $\frac{1}{30}$ th; length of a posterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The cephalo-thorax has a small indentation in the medial line; the anterior part is promi-

nent but obtuse, with a large indentation immediately behind each lateral pair of eyes; the falces are moderately strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are inclined towards the lip, which is semicircular and prominent at the apex. These parts are glossy, and have a brownish-black hue, the falces and maxillæ being the palest. The legs are provided with hairs, and are of a red-brown colour; the fourth pair is rather the longest, then the first, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The eyes are disposed on the frontal prominence of the cephalo-thorax; one pair is seated on the anterior part of its summit, and another, situated lower down, in front, describes with the former a trapezoid whose inferior side is the shortest; the eyes of each lateral pair are contiguous, and the two lower ones of the trapezoid are the smallest of the eight. The palpi have a brown tint; the radial joint is much larger than the cubital, and its extremity, which is greatly produced, tapers to a point curved outwards in front of the digital joint; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; they are highly developed, complicated in structure, with a short, curved, pointed, black spine at the extremity, and are of a reddish-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue, that of the branchial opercula being brown.

A specimen of *Walckenaëra picina*, captured in the neighbourhood of Manchester, was received from Mr. T. Glover, in June, 1838; and in the following month another specimen was taken near Llanrwst. Both individuals were adult males.

WALCKENAËRA FASTIGATA. Pl. XXII, fig. 229.

Theridion acuminatum, Wider, Museum Senckenb., Band i, p. 232, taf. 15, fig. 11.

Micryphantes acuminatus, Koch, Die Arachn., Band iv, p. 130, tab. 143, figs. 332, 333.

Argus — Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 370.

Length of the male, $\frac{1}{12}$ th of an inch; length of the cephalo-thorax, $\frac{1}{18}$ th, breadth, $\frac{1}{24}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of a posterior leg, $\frac{1}{7}$ th; length of a leg of the third pair, $\frac{1}{10}$ th.

The cephalo-thorax is large, oval, convex, glossy, depressed at the base, with a broad, shallow indentation in the medial line; the anterior part, which is very prominent, has a large indentation on each side, and is divided into two lobes by a deep, transverse groove in front; the summit of the superior lobe is rounded, with a slight depression in the middle, and has some short hairs in front; the inferior lobe, which is much the larger, is very convex; the falces are small, conical, and vertical; the maxillæ are powerful, and inclined towards the lip, which is semicircular and prominent at the apex; and the sternum is broad, heart-shaped, convex, and glossy. These parts are of a very dark-brown colour, the base of the cephalo-thorax being the palest. The eyes are nearly equal in size, and are disposed on the anterior

prominence of the cephalo-thorax; two are seated transversely on the summit of the superior lobe, and the other six on the summit of the inferior lobe, high above the frontal margin; the four intermediate eyes form a long, narrow trapezoid whose anterior side is the shortest, and those of each lateral pair are placed obliquely on a minute tubercle. The legs are slender, provided with hairs, and of a yellowish-red hue; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, with the exception of the digital joint, which has a brown hue; the radial is shorter than the cubital joint, and is produced and pointed at its extremity, in front; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complex in structure, and of a dark-brown colour. The abdomen is oviform, sparingly clothed with hairs, glossy, convex above, projecting over the base of the cephalo-thorax, and has a brown-black hue.

The trivial name "*acuminata*" having been given to the typical species of the genus *Walckenaëra*, the specific name conferred upon this spider by M. Wider has been changed to *fastigata*. The specimen from which the description was made was found among moss, at Southport, in June, 1859, by the Rev. O. P. Cambridge, and possesses the essential characters of a *Walckenaëra* in a high state of development.

WALCKENAËRA NEMORALIS. Pl. XXII, fig. 230.

Walckenaëra nemoralis, Blackw., Linn. Trans., vol. xviii, p. 641.

— — — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 466.

Argus nemoralis, Walck., Hist. Nat. des Insect. Apt., tom. iv. p. 507.

Length of the male, $\frac{1}{16}$ th of an inch; length of the cephalo-thorax, $\frac{1}{32}$ nd, breadth, $\frac{1}{40}$ th; breadth of the abdomen, $\frac{1}{32}$ nd; length of a posterior leg, $\frac{1}{13}$ th; length of a leg of the third pair, $\frac{1}{17}$ th.

The legs are robust and provided with hairs; the fourth pair is the longest, then the first, and the third pair is the shortest; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base; the cephalo-thorax has no indentation in the medial line; the anterior part is prominent but obtuse, with a transverse groove in front, which divides it into two segments; one pair of eyes is seated on the upper segment, near its anterior margin, and the rest are distributed on the lower segment, one pair being placed on each side, and the other in front; the eyes of the last pair are the smallest of the eight, and, with those on the upper segment, form a long trapezoid, whose shortest side is before; the falces are moderately strong, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad, convex, and heart-shaped. These parts, with the maxillæ, lip, and palpi, are of a brown colour, the legs being the palest, and the lip, anterior part of the cephalo-thorax, and digital joint of the palpi the darkest. The radial

joint of the palpi, which is shorter than the cubital, projects three apophyses from its extremity; the smallest is situated underneath, the largest in front, and the third, of intermediate size, on the outer side; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, with a bold protuberance near the middle, and a short, fine, curved spine at the extremity; their colour is dark reddish-brown. The abdomen is oviform, rather broader at the posterior than at the anterior extremity, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and of a brownish-black hue, that of the branchial opercula being dull-yellow.

In March, 1837, males of this species, in a state of maturity, were found under stones in woods about Llanrwst.

WALCKENAËRA LUDICRA. Pl. XXII, fig. 231.

Walckenaëra ludicra, Camb., Annals and Mag. of Nat. Hist., third series, vol. vii, p. 438.

Length of the female, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{34}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{24}$ th; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{15}$ th.

The cephalo-thorax is oval, convex, glossy, with a slight indentation in the medial line; the falces are conical, somewhat inclined towards the sternum, and armed with a few teeth on the inner surface; the maxillæ are short, convex at the base, and inclined towards the lip; the legs and palpi are moderately long and provided with hairs; the first and fourth pairs of legs are the longest, and equal in length, and the third pair is the shortest; each tarsus is terminated by three claws; the two superior ones are curved and slightly pectinated, and the inferior one is inflected near its base; the abdomen is oviform, glossy, thinly clothed with hairs, convex above, and projects over the base of the cephalo-thorax. These parts are of a pale, dull, brownish-yellow colour; the anterior region of the cephalo-thorax, where the eyes are situated, and its lateral margins being of a dark-brown hue, and the tibiæ of the first and second pairs of legs having a tinge of brown. The lip is semicircular and prominent at the apex; and the sternum is broad, heart-shaped, convex, and glossy. These parts are of a brown colour, the lip and margins of the sternum being the darkest. The eyes are disposed on the anterior part of the cephalo-thorax in two transverse rows; the four intermediate ones form a trapezoid whose anterior side is the shortest, and those of each lateral pair are seated obliquely on a minute tubercle, and are contiguous; the two anterior eyes of the trapezoid are the smallest of the eight. The sexual organs have a dark, reddish-brown hue, with a pale-yellowish septum in the middle.

The male is smaller than the female, but it resembles her in colour. The anterior part of its cephalo-thorax is elevated, obtuse, inclined backwards, very convex behind, and depressed on the sides. The two posterior eyes are seated on the summit of the cephalic eminence, in

front; the other six are situated much lower, but considerably above the frontal margin, so that the four intermediate ones describe a long, narrow trapezoid. The palpi are short, and the radial and digital joints have a brown hue; the radial, which is much shorter than the cubital joint, projects a small, pointed apophysis from its extremity, in front, and a smaller one underneath; the digital joint is short, broad, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, prominent, complicated in structure, with a curved, black spine near their extremity, on the inner side, and are of a reddish-brown colour.

Both sexes of this small *Walckenaëra* were found by the Rev. O. P. Cambridge among gorse at Hursley, near Winchester, and at Lyndhurst and at Bloxworth, in the summer of 1860.

WALCKENAËRA FRONTATA, Pl. XXII, fig. 232.

Savignia frontata, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 105.

— — Blackw., Research. in Zool., p. 312, pl. 2, figs. 1, 2.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 253.

Length of the male, $\frac{1}{12}$ th of an inch; breadth of the cephalo-thorax, $\frac{1}{28}$ th; breadth of the abdomen, $\frac{1}{28}$ th; length of an anterior leg, $\frac{1}{10}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The cephalo-thorax, which is of an elongated-oval form, is convex, glossy, with a minute indentation in the medial line, and an erect, conical prominence in front, surmounted by a tuft of fine hairs; the falces are small, conical, armed with teeth on the inner surface, and inclined towards the sternum, which is broad and heart-shaped; the maxillæ are enlarged at the base, where the palpi are inserted, and greatly inclined towards the lip, which is semi-circular and prominent at the apex. These parts have a brownish-black hue, the falces and maxillæ being faintly tinged with red. The eyes are small; four are disposed in a transverse row behind the base of the frontal prominence, and immediately before each lateral eye another is situated; two more, seated near the front of the apex of the prominence, are the darkest of the eight, and are distinguished with difficulty. The legs are moderately long and provided with hairs; the anterior and posterior pairs are the longest, and equal in length, and the third pair is the shortest; they are of a brown hue, tinged with red; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and the radial, which is larger and darker than the cubital joint, is depressed, hairy, and tapers to an acute point, curved outwards in front of the digital joint; the digital joint is somewhat oval, having a prominent lobe on the outer side, near the base; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complex, with curved, spine-like processes, and are of a dark, red-brown colour. The abdomen is oviform, convex

above, projecting over the base of the cephalo-thorax; it is thinly clothed with hairs, glossy, and black.

Adult males of this interesting species were taken on iron-rails at Crumpsall Hall, in the autumn of 1832, and it has since been met with, at different seasons of the year, in various parts of Lancashire, Yorkshire, Cheshire, Dorsetshire, Denbighshire and Caernarvonshire. Little is known as regards its economy, except that it is active during the day, decidedly æronautic, making frequent ascents into the atmosphere, and that it can exist for a long period of time immersed in water.

This spider, on which the genus *Savignia* was founded, was supposed, when discovered, to have only six eyes. Since then it has been found to possess an additional pair of visual organs, difficult to be discerned, situated towards the front of the apex of its conical cephalic prominence; consequently it had to be removed from the tribe *Senoculina*, in which a place had been assigned to it, to the genus *Walckenaëra*, with the spiders of which genus it is connected by marked relations of affinity.

Genus—PACHYGNATHA, Sund.

Eyes arranged on the anterior part of the cephalo-thorax, in two transverse rows; the four intermediate ones form a square, those of each lateral pair being placed obliquely on a small tubercle, and nearly contiguous.

Maxillæ long, inclined towards the lip, slightly dilated at the extremities, which converge abruptly and are in contact.

Lip large, triangular, pointed or rounded at the apex.

Legs long and slender; the first pair is the longest, then the second, and the third pair is the shortest.

Falces very powerful, diverging widely at their extremities.

PACHYGNATHA CLERCKII. Pl. XXII, fig. 233.

Pachygnatha Clerckii, Sund., Vet. Acad. Handl., 1829, p. 208, and 1832, p. 258.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 466.

— *Listeri*, Koch, Uebers. des Arachn. Syst., erstes Heft., p. 10.

— — Koch, Die Arachn., Band xii, p. 142, tab. 430, fig. 1064.

Manduculus ambiguus, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. iii, p. 111.

— — Blackw., Research. in Zool., p. 359, pl. 3, figs. 3—5.

Theridion maxillosum, Hahn, Die Arachn., Band ii, p. 37, tab. 53, fig. 122.

Linyphia maxillosa, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 267.

— *Clerckii*, Walck., Ibid., tom. ii, p. 270.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{3}$ th, breadth, $\frac{1}{11}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{3}{8}$ ths; length of a leg of the third pair, $\frac{1}{2}$ th.

The cephalo-thorax is large, convex, glossy, marked with minute punctures, and has an indentation in the medial line; it is compressed before, rounded on the sides and in front, and is of a light, reddish-brown colour, with a longitudinal black band in the middle, another on each side, and a short, black streak directed backwards from each lateral pair of eyes. The falces are convex in front, armed with teeth on the inner surface, and a long, moderately curved fang at their extremity; they have a light, reddish-brown hue, and that of the maxillæ and lip is dark, red-brown, the latter being the darker. The sternum, which is heart-shaped and marked with minute punctures, is rather darker coloured than the cephalo-thorax. The legs are sparingly supplied with hairs, and have a pale, yellowish-brown tint; each tarsus is terminated by three claws; the two superior ones are curved and finely pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; it is thinly clothed with short hairs, and the upper part, which is of a yellowish-brown colour, tinged with olive, is irregularly bordered with black; a narrow, longitudinal band of a pale-yellow hue, having its anterior half bordered with black and comprising a slender black streak, occupies the medial line, and a broad, dull-yellow band, which is palest at its superior margin, and is tinged with light-brown below, extends along each side; the under part is of a yellowish-brown colour, a band of a deeper shade, bounded laterally by a faint yellow line, extending along the middle; and the branchial opercula have a yellow tint. This species varies considerably in colour.

The male is smaller than the female, and its abdomen is more distinctly marked, the upper part being almost black, and the medial and lateral bands nearly white in some individuals. Its falces have an obtuse, conical process near the insertion of the fang, which latter appendage has a small indentation about the middle, externally, and a corresponding projection within the curve. The radial joint of the palpi is longer than the cubital, and clavate; the digital joint consists of two parts; the shorter and slenderer part is connected with the palpal organs on the upper side, and the longer is in contact with the same organs on the inner side, and extends a little beyond them; the palpal organs are glossy and globular at the base, with a pointed process anteriorly, which has the appearance of being somewhat twisted, and are of a very dark, reddish-brown colour, approaching to black.

Arachnologists, in their endeavours to identify the species constituting the genus *Pachygnatha* of Professor Sundevall, have involved their synonyma in a labyrinth of such perplexing intricacy as to render any attempt at revision extremely difficult. In submitting the result of a careful investigation of the subject to the consideration of zoologists, a hope is entertained that it may tend to facilitate a more accurate knowledge of this small but interesting group.

The *Pachygnatha Listeri* of M. Koch and the *Linyphia maxillosa* of M. Walckenaer are evidently the same as *Pachygnatha Clerckii*; but the *Theridion vernale* of M. Hahn and the *Pachygnatha Listeri* of Professor Sundevall, which are included by M. Walckenaer among the synonyma of *Linyphia maxillosa*, must not be confounded with that species and with each other, *Theridion vernale* being identical with the *Pachygnatha Degeerii* of Professor Sundevall.

As M. Walckenaer states that the description of his *Linyphia Clerckii* is borrowed from Professor Sundevall's account of *Pachygnatha Clerckii*, of course it must be regarded, notwithstanding the great disparity in size, as a synonym of the latter. The spider, represented by M. Koch as the *Pachygnatha Clerckii* of Professor Sundevall ('Die Arachn.', B. xii, p. 146, tab. 430, fig. 1067) is quite distinct from that species, and is admitted to be an immature individual by M. Koch himself, who remarks, "Ich fand sie auf einer Reise in der Nähe von Zweibrücken, aber nur Weibchen und diese nicht im Zustande vollständiger Ausbildung; ein solches stellt die hier gegebene Abbildung vor."

Mr. Thomas Blackwall met with *Pachygnatha Clerckii*, which pairs in October, under stones and rubbish in the township of Crumpsall, in the autumn, 1831; and specimens of it have since been received from Yorkshire, Middlesex, Cambridgeshire, Northamptonshire, and Berwickshire. Mr. R. Templeton states that it is common in Ireland. In it are combined several striking characteristics of the species composing the genera *Theridion* and *Tetragnatha*. Allied to the former by the structure of the oral apparatus, and by the irregularity of the insignificant web it fabricates, it resembles the latter in the form and relative length of its legs, which it frequently extends in the same manner as *Tetragnatha extensa*; thus closely connecting the *Linyphiidæ* with the *Theridiidæ* and *Epëiridæ*.

PACHYGNATHA LISTERI. Pl. XXII, fig. 234.

Pachygnatha Listeri, Sund., Vet. Acad. Handl., 1829, p. 210.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 467.

Manduculus limatus, Blackw., Linn. Trans., vol. xviii, p. 667.

Length of the female, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{7}{32}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The abdomen is oviform, thinly clothed with short hairs, convex above, projecting over the base of the cephalo-thorax; it is of a red-brown colour, with a series of white, angular lines, whose vertices are directed forwards, extending along the middle of the upper part; on each side there is a broad, irregular, yellowish band, which is palest at its superior margin, and is tinged with light, red-brown below; an obscure, yellowish streak extends along each side of the medial line of the under part; and the branchial opercula have a dull-yellow tint. The cephalo-thorax is large, convex, glossy, marked with minute punctures, and has an indentation in the medial line; it is compressed before, rounded on the sides and in front, and is of a red-brown colour, with a black, longitudinal band in the middle, and a few obscure spots of the same hue on the sides, immediately above the margins. The sternum is heart-shaped, marked with minute punctures, and resembles in colour the ground of the cephalo-thorax. The falces are convex in front, armed with teeth on the inner surface, and have a very dark, reddish-brown hue, approaching to black, that of the maxillæ and lip being dark, reddish-brown. The legs are sparingly supplied with hairs, and have a pale, yellowish-brown

tint; the two superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity.

The male is smaller and darker coloured than the female. The fangs of its falces have a slight indentation near the middle, externally, and a corresponding projection within the curve. The radial joint of the palpi is longer than the cubital, and clavate; the digital joint consists of two parts; the shorter and slenderer part is connected with the palpal organs on the upper side, and the longer is in contact with the same organs on the inner side and extends a little beyond them; the palpal organs are glossy and globular at the base, with a pointed process anteriorly, which has the appearance of being twisted, and are of a very dark, reddish-brown colour, approaching to black.

The *Linyphia manducula* of M. Walckenaer ('Hist. Nat. des Insect. Apt.', t. iv, p. 482) is the same as *Manduculus limatus*, and, consequently, lapses into a synonym of *Pachygnatha Listeri*. This species occurs under stones and on bushes in woods about Oakland, and the male has the palpal organs completely developed in September. It has also been captured in Lancashire, Yorkshire, and Northamptonshire.

In the 'Transactions of the Linnean Society,' vol. xviii, p. 668, it is proposed to institute a comparison between *Manduculus limatus* and the *Linyphia tenebricola* of M. Wider (Museum Senckenbergianum, B. 1, p. 267, taf. 18, fig. 2); as they differ, however, very decidedly in structure and colour, no doubt they are perfectly distinct.

PACHYGNATHA DEGEERII. Pl. XXII, fig. 235.

Pachygnatha Degeerii, Sund., Vet. Acad. Handl., 1829, p. 211, and 1832, p. 259.

— — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 10.

— — Koch, Die Arachn., Band xii, p. 143, tab. 430, fig. 1065.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 468.

Linyphia Degeerii, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 269.

Theridion vernale, Hahn, Die Arachn., Band ii, p. 38, tab. 53, fig. 123.

Manduculus vernalis, Blackw., Linn. Trans., vol. xix, p. 125.

Length of the female, $\frac{1}{7}$ th of an inch; length of the cephalo-thorax, $\frac{1}{13}$ th, breadth, $\frac{1}{20}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{5}{24}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The cephalo-thorax is large, convex, glossy, and marked with minute punctures; it is compressed before, rounded on the sides and in front, and has an indentation in the medial line; the falces are convex in front, and armed with teeth on the inner surface; the sternum is heart-shaped, and marked with minute punctures. These parts, with the maxillæ and lip, are of a dark-brown colour, approaching to black, the lip and sternum being the darkest. The legs are sparingly supplied with hairs, and have a pale, yellowish-brown tint; the two

superior tarsal claws are curved and pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is oviform, thinly clothed with short hairs, convex above, projecting over the base of the cephalo-thorax; the upper part is of an olive hue, irregularly bordered with black; in the middle of the anterior part there is a white, longitudinal streak, which is succeeded by a fine black line, having on each side a few short, oblique white streaks; a broad, yellowish band, which is palest at its superior margin, and is sometimes tinged with red below, extends along each side, and a faint yellow streak occurs on each side of the medial line of the under part; the colour of the branchial opercula is dull, yellowish-brown.

The male is smaller than the female, and its abdomen, which is darker coloured, is more distinctly marked. The fangs of its falces have a slight indentation near the middle, externally, and a corresponding projection within the curve. The radial joint of the palpi is longer than the cubital, and clavate; the digital joint consists of two parts; the shorter and slenderer part is connected with the upper side of the palpal organs, and the longer is in contact with the same organs on the inner side, and extends a little beyond them; the palpal organs are glossy and globular at the base, with a pointed process anteriorly, which has the appearance of being twisted, and are of a very dark, reddish-brown colour, approaching to black.

In autumn, adult males and females of this species may frequently be seen running on the ground in various parts of Lancashire, Denbighshire, and Cambridgeshire. A collection of spiders received from Charles C. Babington, Esq., M.A., in 1840, and another made in Northamptonshire by the Rev. Hamlet Clark, in 1842, contained specimens of *Pachygnatha Degeerii*; it is also found in Scotland, Mr. J. Hardy having taken both sexes in Berwickshire, in the spring of 1849, and Mr. R. Templeton has captured it in Ireland.

Family—EPĒIRIDÆ.

In size, in structure, in colour, and in the consistency of their integument, the *Epēiridæ* present several very remarkable points of contrast. They have the falces articulated vertically or on an inclined plane, and their abdomen is provided with three pairs of spinners and two branchial opercula. Marked differences are apparent in the dimensions of the legs of various species, and the tarsi are terminated by three or more claws, the additional ones, when present, being minute. Some of the *Epēiridæ* have a strong moveable spine, inserted near the termination of the tarsus of each posterior leg, on the under side, which is slightly curved upwards at its extremity. These spines have been named *sustentacula*, from the important purpose they subserve. By the contraction of their flexor muscles they are drawn towards the foot, and are thus brought in direct opposition to the claws, by which means the animals are enabled to hold with a firm grasp such lines as they have occasion to draw from the spinners with the feet of the hind-legs, and such also as they design to attach themselves to.

The spiders of this extensive family have a very wide geographical range, inhabiting countries differing greatly in temperature. Trees, bushes, coarse herbage, interstices in rocks and walls, and the inside of caves and buildings, are the situations in which they construct their symmetrical snares; they consist of an elastic spiral line thickly studded with minute globules of liquid gum, whose circumvolutions, falling within the same plane, are crossed by radii converging towards a common centre, which is immediately surrounded by several circumvolutions of a short spiral line devoid of viscid globules, forming a station from which the toils may be superintended by their owner without the inconvenience of being entangled in them.

Genus—EPĒIRA, Walck.

Eyes disposed on the anterior part of the cephalo-thorax in two transverse rows, the four intermediate ones constituting a small square, or nearly so.

Maxillæ short, powerful, narrow at the base and rounded at the extremity.

Lip semicircular, or somewhat oval.

Legs long, varying in their relative length in different species.

EPĚIRA QUADRATA. Pl. XXIII, fig. 236.

EpĚira quadrata, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 56.

— — Sund., Vet. Acad. Handl., 1832, p. 239.

— — Koch, Die Arachn., Band v, p. 66, tab. 162, figs. 381, 382.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 468.

Titulus 8, Lister, Hist. Animal. Angl. de Aran., p. 42, tab. 1, fig 8.

Length of the female, $\frac{7}{10}$ ths of an inch; length of the cephalo-thorax, $\frac{3}{10}$ ths, breadth, $\frac{1}{3}$ th; breadth of the abdomen, $\frac{1}{2}$; length of an anterior leg, $\frac{9}{10}$ ths; length of a leg of the third pair, $\frac{11}{20}$ ths.

The four intermediate eyes form a square, and those of each lateral pair are seated on a tubercle, and are nearly contiguous. The cephalo-thorax is moderately convex, compressed before, truncated in front, rounded on the sides, and has a large indentation in the medial line; it is clothed with whitish hairs, and its colour is very pale, yellowish-brown, with a broad, brownish-black band on each side, nearly parallel with the lateral margin, and another of the same hue extending along the middle, which increases in breadth as it approaches the eyes. The falces are short, strong, conical, vertical, and armed with teeth on the inner surface; their colour is pale, yellowish-brown, with the exception of the extremity, which has a brownish-black tint. The maxillæ are straight, powerful, and greatly enlarged at the extremity, which is rounded; the lip is semicircular, but somewhat pointed at the apex. The colour of these parts is black, the apices having a yellowish-brown hue. The sternum is heart-shaped, and has prominences on the sides, opposite to the legs; it has a black tint, with a small, yellowish streak in the middle of the anterior part. The legs are robust, provided with hairs and numerous erect spines, and of a yellowish-white or very pale, yellowish-brown colour, with brownish-black annuli; the tarsi, in addition to the three claws of the usual structure by which they are terminated, have several smaller ones situated below them. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is large, of a subglobose form, projecting over the base of the cephalo-thorax; the upper part is of a greenish-yellow hue; four oval, white spots, conspicuous in the anterior region, form a trapezoid, whose anterior side is the shortest, and from the outer extremity of each of the posterior spots a white, sinuous line extends to the spinners; along the medial line there is a series of white streaks and spots, and from the anterior streak, which is the longest, several white spots pass to the sides, and are succeeded by some faint, oblique dashes of white; the sides and under part are of an orange-brown colour, a broad, longitudinal band of a deeper shade, obscurely bordered with yellow anteriorly, occurring in the middle of the latter; the sexual organs have a curved, wrinkled, taper, membranous process connected with their anterior part and directed backwards; its colour, and that of the branchial opercula, is dark-brown, the inner margin of the latter being paler. Individuals of this species vary in colour from pale, greenish-yellow to dark, orange-brown, but the four oval,

white spots on the upper part of the abdomen, which are usually conspicuous, serve to distinguish it from other nearly allied species.

The male is much smaller than the female, and its colours are darker, but it resembles her in the design formed by their distribution. The tibiae of the first and second pairs of legs are abundantly supplied with strong, black spines on their anterior surface, and the maxillae have a conical process on the outer side, immediately before the insertion of the palpi. The cubital and radial joints of the palpi are short; the former has two long bristles at its extremity, in front; and the latter, which is the larger, is very prominent on the outer side, and has a strong, obtuse apophysis at its extremity, underneath; the digital joint is of an elongated oval form, with an obtuse, black process at its base curved outwards; it is convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed, prominent, very complicated in structure, and of a dark-brown colour, tinged with red. The convex sides of the digital joints are directed towards each other.

This large and handsome *Epëira* appears to prefer wild uncultivated districts, and is not uncommon in many parts of England and Wales. It pairs in autumn, and in October the female attaches to the stems of heath or gorse a subglobose cocoon composed of coarse yellow silk of a looseish texture, measuring seven tenths of an inch in diameter, which sometimes comprises between 900 and 1000 spherical eggs of a yellow colour, agglutinated together in a lenticular form. In constructing the cocoon the female presses her spinners against the mass of eggs and attaches a compound line to it, then drawing out the line by elevating the body, she again applies the spinners to the eggs and cements the line to them in the form of a small loop; this operation is continued (the lines being united to each other when the eggs are covered) till the cocoon is completed, and, as it consists of a congeries of short silken loops, it cannot be otherwise than loose in texture.

The snare of this spider has the appearance of being constructed with geometrical precision, and is similar in design to the nets fabricated by the *Epëiridae* generally. Near the snare, and connected with its centre by a strong line, the spider constructs a dome-shaped cell of compact white silk which it usually occupies.

EPËIRA APOCLISA. Pl. XXIII, fig. 237.

Epëira apoclisa, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 61.

— — Sund., Vet. Acad. Handl., 1832, p. 243.

— — Hahn, Die Arachn., Band ii, p. 30, tab. 48, fig. 116.

— *arundinacea*, Koch, Uebers. des Arachn. Syst., erstes Heft., p. 2.

— — Koch, Die Arachn., Band xi, p. 109, tab. 385, fig. 913.

Titulus, 6, Lister, Hist. Animal. Angl., De Aran., p. 36, tab. 1, fig. 6.

Length of the female, $\frac{5}{8}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{4}$ th, breadth, $\frac{1}{8}$ th; breadth of the abdomen, $\frac{3}{10}$ ths; length of an anterior leg, $\frac{3}{4}$ ths; length of a leg of the third pair, $\frac{1}{2}$ ths.

The cephalo-thorax is compressed before, broad in front, rounded on the sides, moderately convex, and has a large indentation in the medial line; it is of a brown-red colour, and is clothed with hoary hairs, which are densest on the lateral margins, and in the cephalic region. The falces are powerful, conical, vertical, and armed with teeth on the inner surface; the maxillæ are straight, short, strong, and rounded at the extremity; the lip is semicircular, but slightly pointed at the apex; and the sternum, which is heart-shaped, and sparingly clothed with hoary hairs, has small prominences on the sides, opposite to the legs. These parts are of a very dark-brown colour, with the exception of the extremities of the maxillæ and lip, which have a pale, reddish-brown hue. The legs are long, robust, provided with hairs and erect spines, and of a yellow-brown hue, with dark-brown annuli; the femora have a broad annulus at their extremity, that on each of the anterior ones extending nearly over half the joint; the tarsi are terminated by three claws of the usual structure, below which there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The four intermediate eyes are seated on a prominence and nearly form a square, the two anterior ones, which are rather wider apart than the posterior ones, being the largest of the eight; the eyes of each lateral pair are placed obliquely on a small tubercle, but are not contiguous. The abdomen is oviform, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; the upper part is of a dull-yellow hue, a large, leaf-like, brownish-black mark, mottled with dull-yellow, whose lateral margins are sinuous, and which tapers to the spinners, extending along the middle; the anterior part of this mark comprises a dull-yellow triangle, which includes a brownish-black one, both having their vertices directed forwards; the posterior part of the mark comprises a dull-yellow cross, the longitudinal portion of which tapers towards the spinners, and includes a brownish-black line, which is broadest near its anterior extremity; the transverse portion of the cross is somewhat curved, and its extremities frequently break the continuity of the leaf-like mark, whose posterior part is crossed by several dull-yellow bars; the sides have a dull-yellow hue, a broad, brown-black band, mottled with dull-yellow, and dentated at its superior margin, extending along each; the under part has a brown-black hue, with a curved, yellowish line on each side; the sexual organs have, in connexion with their posterior margin, a short, strong process directed forwards, on each side of which there is a small, glossy protuberance; their colour is dark-brown, tinged with red; and that of the branchial opercula is brown.

The male, though smaller and slenderer than the female, resembles her in the design formed by the distribution of its colours. Its palpi are short; the cubital joint has at its extremity, in front, two long, curved bristles, directed forwards; the radial is larger than the cubital joint, and projects a strong process from its outer side, which is gibbous near the base, and amply provided with long hairs; the digital joint has a brown hue, and is somewhat oval, having a curved process at its base directed outwards; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed and complicated in structure; near their base there is a long, slender, prominent, bifid process, with a small protuberance at its base, on the inner side; the superior division of this process, which is the stronger, is rounded at its extremity, and the inferior one terminates in a point; both are slightly curved towards the inner side; lower down a prominent, depressed, yellowish-brown process occurs, which is enlarged and rounded at its extremity, and near whose summit, on the inner side, the taper and finely pointed end of a strong process, curved round the

extremity of these organs, terminates; the colour of the palpal organs is dark-reddish and yellowish-brown intermixed. The convex sides of the digital joints are directed towards each other.

Much confusion in the synonyma of *Epëira apoclista* has been occasioned by some of its numerous varieties having, without sufficient investigation, been described as distinct species. In attempting to elucidate this intricate subject, the difficulties attending endeavours to reconcile conflicting opinions in such cases, which are well known to naturalists, and are unusually great in this department of zoology, may be alleged as an excuse for any errors unwittingly fallen into. Perhaps the *Epëira foliata* and the *Epëira nauseosa* of M. Koch, 'Die Arachniden,' B. xi, pp. 119, 120, might be added to the synonyma already given; but as doubt may be entertained on this point, it has been deemed better to omit them.

Epëira apoclista frequents gorse, heath, and rank herbage growing near the margins of lakes, pools and brooks, or in other damp situations, among which it constructs a dome-shaped cell of white silk of a compact texture. In this cell, after distributing upon its exterior surface the withered leaves of plants and closing its entrance with a tissue of silk, the spider passes the winter in a state of torpidity. During the summer and autumn the female incloses in cells of a similar construction several subglobose cocoons of yellow silk of a loose texture, measuring, on an average, $\frac{9}{20}$ ths of an inch in diameter, each of which contains about 220 spherical eggs of a pale-brown colour, agglutinated together in a lenticular mass. On the 18th of July, 1846, both sexes of a small insect belonging to the family *Ichneumonidæ*, the female of which is apterous, came out of a cocoon of this spider, and in 1842 specimens of the same insect were obtained from a cocoon of *Epëira umbratica*.

M. Walckenaer, in referring to an interesting fact recorded by Lister, has strangely misinterpreted the meaning of that author; he states that "Lister a observé des larves d'Ichneumon dans les nids de cette espèce" (*Epëira apoclista*): "ces larves se sont transformées sous ses yeux et ont pris leur vol dans l'air" ('Hist. Nat. des Insect. Apt.,' t. ii, p. 65). The source of error will be immediately perceived on perusing the following passage cited from the 'Tractatus de Araneis' of the English naturalist, page 40:—"In nido autem altero divulso triplicem, ut supra dictum est, foetum observavi. Inter primum vero partum sex aderant parvæ Chrysalides sive Thecæ teretes, solidæ, utraque extremitate retusæ, sublividæ, id sc. genus, e quibus Muscæ tripiles, a Moufeto nostro sic dictæ, antiquis vero *Ichneumones* vespæ appellatæ, excludi solent. Ex ipsis autem Araneolis natu majoribus, qui sc. horum vermiculorum voracitatem, dum in ovo, effugerant, quotquot a me aëri expositi, protinus fila ejaculando avolavere; non injucundo sane spectaculo!"

The snares spun by *Epëira apoclista* vary considerably in extent; upwards of 120,000 viscid globules are distributed upon the elastic spiral line in a net of large dimensions, yet under favorable circumstances the time required for its completion seldom exceeds forty minutes.

This species is not uncommon in Scotland and Ireland.

EPËIRA SERICATA. Pl. XXIII, fig. 238.

Epëira sericata, Koch, Uebers des Arachn. Syst., erstes Heft, p. 2.

— — Koch, Die Arachn., Band xi, p. 110, tab. 385, figs. 914, 915.

— *virgata*, Hahn, Die Arachn., Band ii, p. 26, tab. 46, fig. 113.

Length of the female, $\frac{1}{2}$ of an inch; length of the cephalo-thorax, $\frac{1}{3}$ th, breadth, $\frac{1}{6}$ th; breadth of the abdomen, $\frac{3}{10}$ ths; length of an anterior leg, $\frac{5}{8}$ ths; length of a leg of the third pair, $\frac{9}{10}$ ths.

The legs are long, robust, provided with hairs and spines, and of a brownish-yellow colour, with dark-brown annuli, those at the anterior extremity of the femora being the broadest; the first pair is the longest, then the second, and the third pair is the shortest; the tarsi are terminated by the customary number of claws of the usual structure. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The cephalo-thorax is compressed before, rather broad in front, rounded on the sides, moderately convex, and has a large indentation in the medial line; it is of a dark-brown hue, and is clothed with hoary hairs, which are densest on the lateral margins and in the cephalic region, forming in the latter a conspicuous, whitish line that passes between the two intermediate pairs of eyes, and whose extremities extend and converge to the medial indentation, where they meet. The four intermediate eyes are seated on a prominence, and nearly form a square, the two anterior ones, which are rather wider apart than the two posterior ones, being the largest of the eight; the eyes of each lateral pair are placed obliquely on a small tubercle, but are not contiguous. The falces are powerful, conical, vertical, and armed with teeth on the inner surface; the maxillæ are straight, short, strong, and rounded at the extremity; the lip is semicircular, but slightly pointed at the apex; and the sternum, which is heart-shaped, is sparingly clothed with hoary hairs, and has small prominences on the sides, opposite to the legs. These parts have a dark-brown colour, faintly tinged with red, and the extremities of the maxillæ and lip have a yellowish-brown hue. The abdomen is oviform, thinly clothed with hairs, convex above, and projects over the base of the cephalo-thorax; the upper part is of a dark, yellowish-brown colour, freckled with black; a large, leaf-like, brown-black mark, mottled with dark, yellowish-brown, whose lateral margins are sinuous, and finely bordered with yellowish-white, extends along the middle, diminishing in breadth to the spinners; the anterior part of this mark comprises a yellowish-brown triangle, which includes a brown-black one, both having their vertices directed forwards; the posterior part of the mark comprises a yellowish-brown cross, the longitudinal portion of which tapers towards the spinners, and includes a brown-black line, whose broadest part, near its anterior extremity, has a triangular form; the transverse part of the cross is somewhat curved, and its extremities occasionally break the continuity of the leaf-like mark, whose posterior part is crossed by a few obscure, yellowish-brown bars; a broad, brown-black band, freckled with yellowish-brown, and strongly dentated at its superior margin, extends along each side; the under part has a brown-black hue, with a curved, yellowish line on each side; the sexual

organs are moderately developed, with a subcylindrical, transversely striated, taper, membranous process, of a yellow-brown hue, connected with their anterior margin, and curved backwards; their colour is brown, slightly tinged with red, and that of the branchial opercula is red-brown.

The sexes are similar in the design formed by the distribution of their colours, but the male is smaller, much slenderer, and has longer legs than the female. Its palpi are short, and of a reddish-yellow colour, with the exception of the digital joint, which has a brown hue; the cubital joint has at its extremity, in front, two long, curved bristles, directed forwards; the radial is larger than the cubital joint, and projects a strong process from its outer side, which is gibbous near the base, and amply provided with long hairs; the digital joint is somewhat oval, having a curved process at its base, directed outwards; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed and complicated in structure; at their base there is a long, rather strong, and prominent bifid process, with a large, obtuse protuberance near its base, on the inner side; both divisions of the bifid process are slightly curved towards the inner side, and the superior one, which is much the stronger, and rounded at the end, has a small and somewhat pointed projection near its extremity, on the inner side; lower down there is a prominent, depressed, brownish-yellow process, which is enlarged and rounded at its extremity, and near whose summit, on the inner side, the ends of two strong processes terminate; the larger process curves round the extremity of the organs, and the other is situated on their inner side; the colour of the palpal organs is reddish-yellow with dark, reddish-brown intermixed. The convex sides of the digital joints are directed towards each other.

The habits of *EpĚira sericata* are similar to those of *EpĚira apoclista*, and both species may frequently be found in the same localities.

EPĚIRA PATAGIATA. Pl. XXIV, fig. 239.

EpĚira patagiata, Koch, Die Arachn., Band xi, p. 115, tab. 386, figs. 916—919.

— *dumetorum*, Hahn, Ibid., Band ii, p. 31, tab. 48, fig. 117.

— — Koch, Uebers des Arachn. Syst., erstes Heft, p. 2.

Length of the female, $\frac{3}{8}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{5}$ th, breadth, $\frac{1}{6}$ th; breadth of the abdomen, $\frac{5}{24}$ ths; length of an anterior leg, $\frac{3}{8}$ rds; length of a leg of the third pair, $\frac{2}{3}$ ths.

The four intermediate eyes are seated on a prominence, and nearly form a square, the two anterior ones, which are rather wider apart than the posterior ones, being the largest of the eight; the eyes of each lateral pair are placed obliquely on a small tubercle, but are not contiguous. The cephalo-thorax is compressed before, broad in front, rounded on the sides, moderately convex, and has a large indentation in the medial line; it is of a red-brown colour, and is clothed with hoary hairs, which are densest in the cephalic region and on the lateral margins. The falces are powerful, conical, vertical, and armed with teeth on the

inner surface; the maxillæ are straight, short, strong, and rounded at the extremity; the lip is semicircular, but slightly pointed at the apex; and the sternum, which is heart-shaped, is sparingly clothed with hoary hairs, and has small prominences on the sides, opposite to the legs. These parts have a reddish-brown colour, the falces being much the darkest, and the extremities of the maxillæ and lip much the palest. The legs are long, robust, provided with hairs and spines, and of a reddish-yellow colour, with dark-brown annuli, those at the anterior extremity of the femora being the broadest; the first pair is the longest, then the second, and the third pair is the shortest; the tarsi are terminated by the customary number of claws of the usual structure. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is oviform, thinly clothed with hairs, convex above, and projects over the base of the cephalo-thorax; the upper part is of a brownish-yellow colour, freckled with brownish-black; a large, leaf-like, brownish-black mark, which tapers to the spinners, and whose sinuous, lateral margins are finely bordered with yellowish-white, extends along the middle; the anterior part of this mark comprises a black spot of a triangular form, which is bordered with yellowish-white, and whose vertex is directed forwards; the posterior part of the mark comprises a brownish-yellow cross, the longitudinal portion of which tapers towards the spinners, and includes an irregular, longitudinal, brownish-black line; the transverse portion of the cross is somewhat curved, and its extremities do not usually break the continuity of the leaf-like mark, whose posterior part is crossed by a few obscure, brownish-yellow bars; a broad, dark-brown band, mottled with brownish-yellow, and dentated at its superior margin, extends along each side; the under part has a brown-black hue, with a curved, yellowish line on each side; the sexual organs have in connexion with their anterior margin a strong, obtuse process, which is directed obliquely backwards and downwards; their colour is dark, reddish-brown, and that of the branchial opercula is red-brown.

The male is smaller, much less robust, darker coloured, and has longer legs than the female. Its palpi are short, and of a reddish-yellow colour, with the exception of the digital joint, which has a brown hue; the cubital joint has at its extremity, in front, two long, curved bristles, directed forwards; the radial is larger than the cubital joint, and projects a strong process from its outer side, which is gibbous near the base, and amply provided with long hairs; the digital joint is somewhat oval, having a curved process at its base, directed outwards; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed and complicated in structure; at their base there is a short, strong, prominent, bifid process, divided nearly to its base, where there is a large, obtuse protuberance on the inner side; both divisions of the bifid process are nearly equal in length, and curve strongly towards the inner side, the superior one, which is the stronger, having a pointed projection on its outer side; lower down, a prominent, depressed, brownish-yellow process occurs, which is somewhat enlarged and rounded at its extremity, and near whose summit, on the inner side, the obtuse end of a strong process, curved round the extremity of the organs, terminates; the colour of the palpal organs is dark, reddish-brown, with reddish-yellow intermixed. The convex sides of the digital joints are directed towards each other.

Though *Epëira patagiata*, *Epëira sericata*, and *Epëira apoclisa*, are very closely allied species, and inhabit similar localities, and though their colours and the designs formed by

their distribution are liable to vary, yet they may always be distinguished, when adult, by permanent, organic characters, and particularly by differences in the structure of the organs of generation in both sexes of each species, as explained in the foregoing descriptions.

EPËIRA SCALARIS. Pl. XXIV, fig. 240.

Epëira scalaris, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 46.

— — Hahn, Die Arachn., Band ii, p. 27, tab. 47, fig. 114.

— — Blackw., Linn. Trans., vol. xix, p. 127.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. ix, p. 471.

— *pyramidata*, Sund., Vet. Acad. Handl., 1832, p. 242.

— — Koch, Uebers des Arachn. Syst., erstes Heft., p. 2.

— — Koch, Die Arachn., Band xi, p. 107, tab. 384, fig. 912.

Length of the female, $\frac{9}{20}$ ths of an inch; length of the cephalo-thorax, $\frac{3}{10}$ ths, breadth, $\frac{3}{10}$ ths; breadth of the abdomen, $\frac{3}{10}$ ths; length of an anterior leg, $\frac{3}{8}$ ths; length of a leg of the third pair, $\frac{3}{8}$ ths.

The abdomen is large, oviform, thinly clothed with hairs, convex above, and projects greatly over the base of the cephalo-thorax; the upper part is of a pale-yellow colour, with a small, circular, brownish-black indentation on each side of the anterior region, from which a streak of the same hue passes obliquely outwards; on the posterior part there is a large, brownish-black, pyramidal mark, with sinuous lateral margins, whose apex extends to the spinners; the sides and under part have a brownish-black hue; the former are mottled with yellowish-brown, and the latter has a curved, yellow mark on each side of the medial line; the sexual organs are prominent, glossy, and of a reddish-brown colour; a curved, taper, wrinkled, membranous process, connected with their anterior margin, and directed backwards, has a yellowish-brown tint, and that of the branchial opercula is yellow. The cephalo-thorax is glossy, compressed before, truncated in front, rounded on the sides, moderately convex, and has a large indentation in the medial line; it is sparingly clothed with fine, hoary hairs, and is of a pale, dull-yellow colour, with a broad, longitudinal, blackish band on each side, and a narrower one of the same hue extending along the middle. The four intermediate eyes, which are seated on a prominence, nearly form a square, the two anterior ones being rather wider apart than those of the posterior pair; the eyes of each lateral pair are placed obliquely on a tubercle, and are nearly contiguous. The falces are powerful, conical, vertical, armed with teeth on the inner surface, and of a yellowish-brown colour, with the exception of their extremity, which has a brown tint. The maxillæ are short, strong, and rounded at the extremity; the lip is semicircular, but slightly pointed at the apex; and the sternum, which is heart-shaped, has eminences on the sides, opposite to the legs. These parts are of a brownish-black hue, the extremities of the maxillæ and lip having a yellowish-brown tint. The legs are robust, provided with hairs and numerous erect spines, and of a pale, yellowish-brown colour, with dark-brown annuli; the tarsi are terminated by three claws of the usual

structure, below which there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity.

The sexes, though similar in colour, present marked differences in structure. The male, besides being smaller than the female, has the anterior extremity of its cephalo-thorax more pointed, and the tibiæ of its second pair of legs stronger and more amply provided with spines than she has. The coxæ of its anterior pair of legs have a curved process at their extremity, on the under side, and those of the second pair have a conical, pointed, process at their base. Its palpi are short; two long bristles project from the extremity of the cubital joint, in front, and the radial joint has an obtuse, light-coloured apophysis on its outer side, which has a small protuberance at its base, and a dark-coloured one on its inner side; the digital joint is of a slender, elongated, oval form, with a black process at its base, which is curved outwards, and enlarged at its extremity; it is convex and hairy externally, slightly concave within, and the palpal organs, which are connected with this concavity, are very highly developed, remarkably prominent, and complicated in structure; they have a strong, curved, pointed process at their extremity, and their colour is a mixture of black, yellowish-brown, and reddish-brown. The convex sides of the digital joints are directed towards each other.

Specimens of this showy species have been received from Staffordshire, Shropshire, Northamptonshire, Middlesex, and Devonshire, but it does not appear to have been observed in the north of England or Wales.

EPËIRA SIGNATA.

Epëira signata, Blackw., Annals and Mag. of Nat. Hist., second series, vol. vi, p. 341.

— — Blackw., Ibid., vol. x, p. 182.

Length of an immature male, $\frac{3}{16}$ ths, of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{14}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{7}{24}$ ths; length of a leg of the third pair, $\frac{3}{20}$ ths.

The four intermediate eyes form a square, and each lateral pair is seated obliquely on a small tubercle. The cephalo-thorax is convex, compressed before, rounded on the sides, abundantly supplied with white hairs, particularly on the anterior part, and has an indentation in the medial line; it is of a dark, red-brown colour, which is most intense on the sides, and a conspicuous, yellowish-white spot occurs in the angle formed by the furrows which serve to distinguish the head from the thorax. The falces are conical, vertical, armed with teeth on the inner surface, and of a red-brown colour, which is darkest at the base, in front. The maxillæ are short, straight, and rounded at the extremity. The lip is nearly semicircular, but somewhat pointed; and the sternum is heart-shaped. These parts are of a dark, red-brown colour, with the exception of the extremities of the maxillæ and lip, which are much paler. The legs are robust, provided with hairs and spines, and are of a pale, reddish-brown hue,

with streaks, spots, and annuli of a deeper shade; the tarsi are terminated by three claws of the usual structure, below which there are several smaller ones. The palpi are short, and resemble the legs in colour. The abdomen is short, broad, sparingly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; the upper part is of a dark, red-brown colour, freckled with numerous minute spots of a lighter hue, and near the anterior extremity, on each side of the medial line, there is a large, yellowish-white spot; the sides are paler than the back, and along the middle of the under part a broad, dark, reddish-brown band extends, which comprises two curved, yellowish-white lines, whose concavities are directed towards each other; the colour of the branchial opercula is dark, reddish-brown. The specimen from which the above description was made had the digital joint of the palpi very tumid, but the palpal organs were not developed, clearly demonstrating that it had to undergo its final change of integument before it arrived at maturity.

This distinctly marked spider was taken at Broadstairs, in Kent, in the month of September, by Mr. F. Walker, and occupies a place in his cabinet.

EPEIRA UMBRATICA. Pl. XXIV, fig. 241.

Epëira umbratica, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 66.

— — Sund., Vet. Acad. Handl., 1832, p. 238.

— — Hahn, Die Arachn., Band ii, p. 24, tab. 46, fig. 112.

— — Koch, Uebers des Arachn. Syst., erstes Heft, p. 2.

— — Blackw., Linn. Trans., vol. xix, p. 127.

— — Koch, Die Arachn., Band xi, p. 128, tab. 389, figs. 930, 931.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 182.

— *umbraticola*, Latr., Gen. Crust. et Insect., tom. i, p. 105.

Titulus 9, Lister, Hist. Animal. Angl. De Aran., p. 44, tab. 1, fig. 9.

Length of the female, $\frac{11}{24}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{3}$ th, breadth, $\frac{1}{6}$ th; breadth of the abdomen, $\frac{7}{24}$ ths; length of an anterior leg, $\frac{13}{20}$ ths; length of a leg of the third pair, $\frac{7}{20}$ ths.

The abdomen is somewhat oviform, greatly depressed, thinly clothed with hairs, and projects over the base of the cephalo-thorax; on the upper part there is a large, oval space, of a very dark-brown colour, which tapers to the spinners, and whose sinuous lateral margins are almost black; within the oval space, on each side of the medial line, there is a longitudinal series of five or six indentations, and exterior to it, but following its sinuosities, there is an obscure, whitish line; the sides, which have a brown tint, are palest at their superior margin; a few dull-yellow spots form a curve above the spinners; and the under part has a brownish-black hue, with a yellowish, curved spot on each side of the medial line; a depressed, oval process, directed backwards, is connected with the anterior part of the sexual organs, which, with the branchial opercula, are of a dark-brown colour. The cephalo-thorax is slightly convex, compressed before, broadly truncated in front, rounded on the sides, sparingly clothed

with hoary hairs, and has a large indentation in the medial line; the falces are short, strong, conical, vertical, convex in front, and armed with teeth on the inner surface; the maxillæ are powerful and rounded at the extremity; the lip is nearly semicircular, but somewhat pointed; and the sternum is heart-shaped, sparingly supplied with hoary hairs, and has on the sides eminences opposite to the legs. These parts are of a dark-brown colour, approaching to black, with the exception of the extremities of the maxillæ and lip, which have a yellowish-brown tint. The legs are robust, provided with hairs and erect spines, and have a dark-brown hue approaching to black, with pale, reddish-brown or yellowish-brown annuli; each tarsus is terminated by three claws of the usual structure, below which there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The four intermediate eyes are seated on an eminence, and nearly form a square, the two anterior ones, which are rather wider apart than the posterior ones, being the largest of the eight; the eyes constituting each lateral pair are placed obliquely on a tubercle, but are not contiguous.

The sexes are similar in colour, but the male is the smaller. The cubital and radial joints of its palpi are short; the former has one or two long bristles at its extremity, in front, and the latter, which is the stronger, is prominent on the under side; the digital joint is somewhat oval, with a process at the base, curved outwards and notched at the extremity, and a lobe on the lower side; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, prominent, complicated in structure, with a bold process, whose extremities are pointed, contiguous to the lateral lobe, and are of a dark, reddish-brown colour. The convex sides of the digital joints are directed towards each other.

Epëira umbratica is much more abundant in various parts of England and Wales than it is generally supposed to be, its apparent scarcity being attributable to its nocturnal habits and the care with which it conceals itself during the day.

In June the female constructs, under the exfoliating bark of trees and in crevices in old rails a subglobose cocoon of white silk, of a slightish texture, measuring $\frac{3}{4}$ ths, of an inch in diameter, in which she deposits about 160 spherical eggs of a yellowish-brown colour, agglutinated together in a lenticular mass. On the exterior surface of the cocoon small pieces of bark, wood, and other extraneous materials, are distributed, which serve to assimilate it to surrounding objects.

This spider spins a large net, having wide intervals between the radii and the circumvolutions of the elastic spiral line, and preys chiefly on moths.

EPËIRA AGALENA. Pl. XXIV, fig. 242.

Epëira agalena, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 36.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. xiv, p. 32.

— *Sturmii*, Hahn, Die Arachn., Band i, p. 12, tab. 3, fig. 8.

Atea agalena, Koch, Die Arachn., Band xi, p. 137, tab. 391, figs. 936—938 (the specific name *hyalina* is incorrectly connected with the numbers 936, 937, in the plate, but this error is rectified in the text).

Length of the female, $\frac{3}{4}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{13}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The four intermediate eyes are placed on a slight prominence and form a square, the two posterior ones being the largest of the eight, and the eyes of each lateral pair are seated obliquely on a tubercle, but are not contiguous. The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, depressed behind, clothed with whitish hairs on the anterior part, and has an indentation in the medial line; the falces are powerful, conical, vertical, and armed with teeth on the inner surface; the maxillæ are short, strong, straight, and rounded at the extremity; the lip is semicircular, but somewhat pointed; and the sternum is heart-shaped, with small eminences on the sides, opposite to the legs. These parts are of a red-brown colour; the falces, sternum, and base of the lip are much the darkest, and the cephalic region, which is the palest, has a faint tinge of yellow. The legs are provided with hairs and erect spines, and their colour is yellowish-brown, with dark-brown annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is large, of a somewhat subglobose form, and projects greatly over the base of the cephalo-thorax; it is thinly clothed with hairs, and of a pale red-brown colour above, faintly mottled with dull, yellowish-white spots, the anterior extremity being the darkest; on the upper part there is a leaf-shaped mark, which is broad before and tapers to the spinners; it is obscurely defined by sinuous lateral margins of a dark-brown hue, and is bordered by white spots, which converge abruptly in front, presenting the appearance of a short pedicle to the leaf-shaped mark; above the spinners some transverse, dark-brown bars occur, and the sides are marked with a few oblique, red-brown streaks; the under part, including the branchial opercula and spinners, is of a dark red-brown colour, a broad band of a dull-yellow hue, mingled with pale reddish-brown, extending along each side of the medial line; the sexual organs have a small, black prominence on each side, and an oval, membranous process, directed obliquely backwards, is connected with their anterior margin.

The male bears a close resemblance to the female, but may be distinguished from her by its smaller size, darker colour, and by its first pair of legs being armed with long spines on their anterior surface. The cubital and radial joints of its palpi are short; the former has two long, curved bristles at its extremity, in front, and the latter, which is the broader, has two fine ones on its outer side, which is prominent; the digital joint is somewhat oval, with a process at its base curved outwards; it is convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed and complicated in structure, with a yellowish-brown bilobed process on the under side; one of these lobes is directed outwards, and is terminated by three pointed spines of unequal length; the other lobe is contiguous to the inferior margin of the joint, and is terminated by a prominent, slightly curved, pointed spine; these organs have a very dark-brown hue. The convex sides of the digital joints are directed towards each other.

In the month of June this *Epëira* may be found in a state of maturity on trees and bushes in woods about Oakland.

EPĒIRA SOLERS. Pl. XXIV, fig. 243.

Epĕira solers, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 41.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 182.

— *agalena*, Hahn, Die Arachn., Band ii, p. 29, tab. 47, fig. 115.

— — Blackw., Linn. Trans., vol. xix, p. 126.

Atea sclopetaria, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 4.

— — Koch, Die Arachn., Band xi, p. 134, tab. 390, figs. 934, 935.

Length of the female, $\frac{3}{10}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{2}$ th, breadth, $\frac{1}{3}$ th; breadth of the abdomen, $\frac{1}{2}$ th; length of an anterior leg, $\frac{5}{12}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The legs are robust, abundantly provided with hairs and strong spines, and of a yellowish-brown hue, with red-brown annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The cephalo-thorax is compressed before, truncated in front, rounded on the sides, depressed behind, and has an indentation in the medial line; it is densely covered with long, yellowish-white hairs, and is of a very dark-brown colour, with the exception of the anterior part, about the region of the eyes, which has a yellowish-brown tint. The four intermediate eyes are seated on a small prominence, and form a square, and those of each lateral pair are placed obliquely on a tubercle, but are not in contact. The falces are strong, conical, vertical, armed with teeth on the inner surface, and of a reddish-brown colour. The maxillæ are short, powerful, and greatly enlarged at the extremity; and the lip is semicircular, but somewhat pointed. These organs are of a dark-brown hue at their base, that of their apices being yellowish-brown. The sternum, which is heart-shaped, has a very dark-brown tint, with a longitudinal, yellow-brown line in the middle; it is covered with whitish hairs, and has small eminences on the sides, opposite to the legs. The abdomen is of a very broad oviform figure, and projects greatly over the base of the cephalo-thorax; it is densely covered with hairs, and the upper part is of a brown colour, with an angular band of a deeper shade, whose apex is directed backwards, extending along the middle; this band is intersected by transverse lines of the same hue, diminishing in extent as they approach the spinners; both the longitudinal band and transverse lines are bordered by long, whitish hairs, and a sinuous band of long, whitish hairs extends along each side; the under part, which has a yellowish-brown tint, is marked with brown spots and streaks, and a broad, longitudinal, brownish-black band, comprising two curved, yellow lines, occurs in the middle; the branchial opercula are of a brown colour, and the sexual organs have a membraneous process of a semicircular form in connection with their anterior margin.

The male is smaller and darker coloured than the female, and its legs, which are much longer than hers, are marked with broader annuli. Its palpi have a dark, yellowish-brown hue; the cubital and radial joints are short, and the latter has a slender apophysis at its

extremity; the digital joint is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a very dark reddish-brown colour.

In a catalogue of spiders, published in the 'Transactions of the Linnean Society,' vol. xix, p. 113, this species is included under the name of *Epëira agalena*; the mistake originated in copying the appellation from M. Hahn's work, 'Die Arachniden,' where it is connected with a figure and description of *Epëira solers*.

The sexes pair in June, and in that and the succeeding month the female fabricates a subglobose cocoon of yellowish-brown silk of a loose texture, about half an inch in diameter, and deposits in it 140 or 150 dark-brown, spherical eggs, agglutinated together in a globular form.

This spider occurs, but not abundantly, in pastures near Llanrwst, spinning among coarse plants and bushes a net of moderate extent, between the centre of which and a slightly concave cell of white silk, constructed at a short distance from it, a communication is established by means of a strong line; concealed in this retreat, the vibrations of the connecting medium speedily convey intelligence to the watchful owner of the snare that a victim is involved in its meshes.

EPËIRA SIMILIS. Pl. XXV, fig. 244.

Epëira similis, Blackw., Annals and Mag. of Nat. Hist., vol. xiii, p. 186.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 183.

Length of the male, $\frac{1}{3}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{12}$ th; breadth of the abdomen, $\frac{1}{11}$ th; length of an anterior leg, $\frac{7}{10}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The four intermediate eyes form a square, the two anterior ones, which are seated on a small protuberance, being the largest of the eight; the eyes of each lateral pair are placed obliquely on a tubercle, but, though near together, are not in contact. The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, and has an indentation in the medial line; it is of a yellowish-brown colour, with narrow, blackish margins, and a band of the same hue, which is broadest at its anterior extremity, extending along the middle. The falces are powerful, conical, vertical, armed with teeth on the inner surface, and have a red-brown tint. The maxillæ are short, strong, straight, and rounded at the extremity; and the lip is semicircular, but somewhat pointed. These organs are of a reddish-brown colour, with yellowish-brown extremities, the base of the lip being much the darkest. The sternum is heart-shaped, and has small eminences on the sides, opposite to the legs; it is of a brownish-black hue, with a yellowish-brown band in the middle, which diminishes in breadth to its posterior extremity. The legs are long, provided with hairs and black spines, and of a yellowish-brown colour spotted with black. The palpi are short, and have a yellowish-

brown hue, with the exception of the digital joint, which has a red-brown tint; the radial is rather larger than the cubital joint, and is provided with some long hairs; the digital joint is short, oval, convex and hairy externally, concave within, comprising the palpal organs, which are moderately developed, complicated in structure, with a curved, black spine at their extremity, directed upwards, a projecting process near their base, towards the inner side, and are of a dark red-brown colour. The abdomen is oviform, sparingly clothed with hairs, somewhat depressed, and projects over the base of the cephalo-thorax; on the upper part there is a large, oval figure of a brownish-gray colour, having black, sinuous margins, and comprising a row of small, black, slightly indented spots on each side of the medial line; its anterior part, and a series of curved, transverse lines, diminishing in length as they approach the spinners, have a silver-gray hue, and an oval, brown spot occurs on each side of its anterior extremity; a narrow, silver-gray band follows the undulations of the black margins, and the sides and under part are of a brownish colour tinged with yellow, both being marked with minute, blackish spots; a broad, black band extends along the middle of the under part, on each side of which there is a yellow stripe; and the colour of the branchial opercula is yellow.

The sexes resemble each other in the design formed by the distribution of their colours, but the female is larger than the male, measuring one fourth of an inch in length. Its sexual organs are prominent, of a brownish-black hue, and have a broad septum in the middle.

In the summer of 1843, Miss Gertrude Buller Elphinstone captured an adult male *Epëira similis* at East Lodge, Enfield, Middlesex, which she obligingly forwarded to Oakland; and in the autumn of the same year Miss Margaret B. Lewis, of Cichle, Anglesey, took an immature male at Ellesmere, in Shropshire, which, as the digital joints of its palpi were very tumid, had to undergo its final change of integument before it arrived at maturity. Subsequently, specimens of adult males and females of this species have been obtained from Hampshire, Northamptonshire and Yorkshire.

Epëira similis and *Epëira calophylla* are very closely allied; but the males may be distinguished from each other without difficulty by differences in the structure of their palpi and palpal organs.

EPËIRA CALOPHYLLA, Pl. XXV, fig. 245.

Epëira calophylla, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 70.

— — Latr., Gen. Crust. et Insect., tom. i, p. 108.

— — Sund., Vet. Acad. Handl., 1832, p. 252.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 183.

Zilla — Koch, Die Arachn., Band vi, p. 148, tab. 216, figs. 538, 539.

Eucharia atrica, Koch, Die Arachn., Band xii, p. 103, tab. 419, figs. 1030, 1031.

Titulus 10, Lister, Hist. Animal. Angl. de Aran., p. 47, tab. 1, fig. 10.

Length of the female, $\frac{7}{10}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{8}$ th, breadth, $\frac{1}{10}$ th;

breadth of the abdomen, $\frac{1}{3}$ th; length of an anterior leg, $\frac{1}{4}$; length of a leg of the third pair, $\frac{1}{4}$ th.

The legs are provided with hairs and black spines, and are of a yellowish-brown colour, with black annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, and has a large indentation in the medial line; it is of a yellowish-brown hue, with black lateral margins, and a blackish band, which is broadest at its anterior extremity, extending along the middle. The four intermediate eyes form a square, the two anterior ones, which are seated on a small protuberance, being the largest of the eight; the eyes of each lateral pair are placed obliquely on a tubercle, but, though near together, are not in contact. The falces are powerful, conical, vertical, convex in front, near the base, armed with teeth on the inner surface, and of a reddish-brown hue, the frontal convexity being the darkest. The maxillæ are short, strong, and very broad at the extremity, which is rounded; and the lip is semicircular, but somewhat pointed. These organs are of a reddish-brown colour, with yellowish-brown extremities, the base of the lip being much the darkest. The sternum is heart-shaped, and has small eminences on the sides, opposite to the legs; it has a black tint, with a yellowish-brown band in the middle, which diminishes in breadth to its posterior extremity. The abdomen is oviform, thinly clothed with hairs, somewhat depressed, and projects greatly over the base of the cephalo-thorax; on the upper part there is a large, oval figure of a gray colour, having black, sinuous margins, and a row of small, black, slightly indented spots on each side of the medial line; its anterior part, and a series of curved, transverse lines, diminishing in length as they approach the spinners, have a silver-gray hue, and an oval black spot occurs on each side of its anterior extremity; a narrow, silver-gray band follows the undulations of the black margins, and the sides and under part are of a brownish colour tinged with yellow, both being marked with minute, blackish spots; a broad, black band extends along the middle of the under part, on each side of which there is a yellow stripe; and the colour of the branchial opercula is yellow. The sides of immature individuals have frequently a bright bay tint; and the young on quitting the cocoon have the upper part of the abdomen of a brownish-black hue, with a yellow mark, which is bifid at its posterior extremity, in the medial line of the anterior part.

The male is much smaller and less distinctly marked than the female. Its palpi are long, provided with numerous long hairs, and of a red-brown hue, with a black annulus at the base of the cubital and radial joints; the cubital joint, which is curved downwards, increases in bulk to its extremity, and the radial joint is long, and has a minute, bifid apophysis at its extremity, on the outer side; the digital joint is short, oval, convex and hairy externally, concave within, comprising the palpal organs, which are neither highly developed nor very complicated in structure; they have a curved, black spine at their extremity, directed upwards, a prominent, bifid process at their base, on the inner side, and are of a reddish-brown colour.

This common spider, which is widely distributed in Great Britain and Ireland, frequents shrubs, buildings, and crevices in rocks and walls. It pairs in autumn, and the female constructs a subglobose cocoon of soft, pale-brown silk of a loose texture, measuring half an inch

in diameter, in which she deposits eighty or ninety spherical eggs of a brown colour, slightly cemented together in a subglobose mass. The cocoon is attached to walls and the inferior surface of stones by a thin covering of whitish web. The female has been observed to change her integument five times before she arrives at maturity, once in the cocoon, and four times after quitting it.

In December, 1842, and March, 1843, several cocoons of *Epēira calophylla* were procured, comprising larvæ of two distinct species of insects belonging to the family *Ichneumonidæ*, which fed upon the ova contained in the cocoons and increased rapidly in size; on being converted into pupæ, the females were observed to have the ovipositor turned over the posterior extremity of the abdomen. In the spring of 1843 both sexes of each species, in the imago or perfect state, issued from the cocoons, which had been placed in closed phials. These insects are very dissimilar in size and colour, and the eggs deposited by each in a single cocoon differ in number inversely as the dimensions of the females which produce them; occasionally, the larvæ of both species have been noticed in the same cocoon, but they have not hitherto been detected in the cocoons of any other spider, however favorable the circumstances might be as regards time, condition, and locality under which they were examined.

Epēira calophylla usually employs a radius as a medium of communication between its net and a small tubular cell of white silk which constitutes its retreat, instead of spinning a separate line for that purpose; and this peculiar appropriation, whether the radius be in the plane of the net or whether it be withdrawn from that plane, as is frequently the case, imparts an unfinished appearance to the snare, as it prevents the spider from giving a spiral form to the elastic line on which the viscid globules are disposed, though this is sometimes attempted with a greater or less degree of success. No sooner does the spider arrive at one of the radii adjacent to that in connection with its cell than it returns, traversing the framework of the snare till it arrives at the adjacent radius on the opposite side, when it retraces its steps, and thus, oscillating between the two, spins a number of curved, viscid lines or arcs of circles diminishing in length from the circumference of the net towards the centre. Lister was well acquainted with this peculiarity, so common in the snare of *Epēira calophylla*, but has fallen into the error of supposing that it occurs invariably. See his 'Tractatus de Araneis,' p. 48.

Sometimes this species places its net in situations not entirely surrounded by objects to which it can immediately proceed to attach boundary-lines. In such cases its operations are deserving of attention. After connecting several radii with the most accessible points, it fixes a filament to that extremity of one of them which is furthest from the centre of its net: along this radius the spider proceeds, drawing out the filament from the spinners and guiding it with the claws of a posterior leg, till the point of union with one of the adjacent radii is attained; upon this radius it steps, and passing to its other extremity there makes fast the filament, by this simple process connecting with marginal lines distant objects between which no direct communication previously existed.

Epēira calophylla presents a striking example of the insufficiency of the characters employed by M. Koch in distributing the *Araneidea* into genera and families; though connected with the *Epēiridæ* by the closest relations of affinity, yet he has placed it in his genus *Eucharia*, which he includes in the family *Theridiidæ* ('Uebers. des Arachn. Syst.' erstes Heft, p. 7).

EPEIRA ACALYPHA. Pl. XXV, fig. 246.

Epëira acalypha, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 50.

— — Walck., Ibid., tom. ii, p. 501.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. xx, p. 502.

— *genistæ*, Hahn, Die Arachn., Band i, p. 11, tab. 3, fig. 7.

Zilla — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 5.

— *decora*, Koch, Ibid., erstes Heft, p. 5.

— *acalypha*, Koch, Die Arachn., Band vi, p. 139, tab. 213, figs. 530, 531.

Length of the female, $\frac{3}{16}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{3}{20}$ ths.

The legs are moderately long, provided with hairs and spines, and of a yellowish-brown colour tinged with green, a line on the upper and under sides of the thighs of the first and second pairs, the extremities of the joints, and a few scattered spots having a blackish hue; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a slightly curved, pectinated claw at their extremity. The cephalo-thorax is small, convex, glossy, compressed before, rounded on the sides, and has an indentation in the medial line; it is of a yellowish-brown colour tinged with green; the lateral margins are black, and a fine line of the same hue extends along the middle. The eyes are seated on black spots, and the four intermediate ones nearly form a square; those of the anterior pair are placed on a small prominence, and those of the posterior pair are the largest of the eight; the eyes of each lateral pair are seated on a minute tubercle, and are near to each other, but not in contact. The falces are powerful, conical, vertical, armed with a few teeth on the inner surface, and of a yellowish-brown colour, being darkest at the extremity. The maxillæ are strong, straight, and enlarged and rounded at the extremity; the lip is semicircular, but somewhat pointed at the apex; and the sternum is heart-shaped, with prominences on the sides, opposite to the legs. These parts are black, the extremities of the first two being yellowish-brown. The abdomen is oviform, sparingly clothed with short hairs, glossy, very convex above, and projects greatly over the base of the cephalo-thorax; the upper part is of a greenish-yellow colour, freckled with yellowish-white; four black spots occur in the anterior region, two in the medial line and one on each side, and in the posterior region there are three rows of confluent black spots which extend to the spinners; each side is marked with four oblique, black lines, and the under part, which is black, has a line extending from each dark-brown branchial operculum to the spinners, and several spots at their base of a yellowish-white hue; the sexual organs are prominent, and of a red-brown colour.

M. Koch remarks that the male is much slenderer than the female, and has, in proportion to its size, somewhat longer legs. The black line extending along the middle of the cephalo-thorax is longer and more conspicuous, the abdomen is redder, particularly on the sides, and

the thighs of the first and second pairs of legs have no longitudinal black line on their upper and under surfaces. The cubital and radial joints of its palpi are very small, and the brownish-green digital joint, which is vaulted, comprises the prominent palpal organs; these organs are provided with small spines, and are of a dark red-brown colour.

Seven females of this species were received from Mr. R. H. Meade, who took them from their webs, which were constructed among the twigs of gorse and other bushes growing in Buckinghamshire, in the last week of June, 1856.

EPËIRA CUCURBITINA. Pl. XXV, fig. 247.

Epëira cucurbitina, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 76.

— — Latr., Gen. Crust. et Insect., tom. i, p. 107.

— — Sund., Vet. Acad. Handl., 1832, p. 245.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 185.

Miranda — Koch, Die Arachn., Band v, p. 53, tab. 159, figs. 371, 372.

Titulus 5, Lister, Hist. Animal. Angl. De Aran., p. 34, tab. 1. fig. 5.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{8}$ th, breadth, $\frac{1}{10}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{1}{3}$ rd; length of a leg of the third pair, $\frac{5}{24}$ ths.

The four intermediate eyes form a square, and those of each lateral pair are placed obliquely on a minute tubercle, and are almost in contact. The cephalo-thorax is convex, particularly in the cephalic region, glossy, sparingly clothed with hairs, compressed before, truncated in front, rounded on the sides, and has a large indentation in the medial line; the falces are strong, conical, vertical, convex at the base, in front, and armed with teeth on the inner surface; the maxillæ are short, powerful, and rounded at the extremity; the lip is semi-circular, but somewhat pointed; the sternum is heart-shaped, with small prominences on the sides, opposite to the legs; the legs are robust, and provided with hairs and erect, black spines; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. These parts are of a pale, reddish-brown hue, the bases of the maxillæ and lip having a deeper shade, and their extremities a yellow tint. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is oviform, thinly clothed with hairs, convex above, projecting greatly over the base of the cephalo-thorax; the upper part is of a yellowish-green colour, with a series of minute, black spots extending in a gentle curve on each side of the medial line, and a conspicuous red spot at its extremity, immediately above the spinners; the sides and under part are of a dark-green hue, the latter being marked with a few yellow spots and an obscure, yellow line on each side; the sexual organs are very prominent, of a dark-brown colour, with a curved, wrinkled, membranous process of a lighter hue, which is directed backwards, in connexion with their anterior margin; and the branchial opercula have a yellowish-brown tint.

The male, which is smaller than the female, has a conical protuberance on the outer side of its maxillæ, a longitudinal, black band on each side of its cephalo-thorax, black annuli at the joints of its legs, and the extremity of the thighs of the first, second, and fourth pairs has a red hue; with these exceptions, it greatly resembles the female in colour. The humeral joint of the palpi has a small protuberance at its base, on the under side; the cubital joint is short, and prominent at its extremity, whence project two long, curved bristles, and a third depends from its base, in front; the radial is much stronger than the cubital joint, and very prominent on the outer side; the digital joint is somewhat oval, with a curved process at its base directed outwards and terminating in a black, glossy knob, which nearly extends to the extremity of the cubital joint; it is convex and hairy externally, concave within, and comprises the palpal organs; these organs are very highly developed, complicated in structure, convex and glossy at the base, provided with curved, black, pointed processes near the extremity, and are of a dark-brown colour. The convex sides of the digital joints are directed towards each other.

The young, when extricated from the egg, have the cephalo-thorax and legs of a pale yellowish-white colour, that of the abdomen being reddish-brown; but after their first change of integument they acquire an olive or brownish-green tint, the upper part of the abdomen being marked with whitish spots, and each side with a longitudinal stripe of the same hue, parallel with which, on the upper side, there is a series of minute, black spots.

In well-wooded districts in Great Britain and Ireland, this species is not uncommon. The sexes pair in June, and the female attaches to the stems or leaves of shrubs, in the vicinity of her snare, a subglobose cocoon of bright-yellow silk of a loose texture, measuring two thirds of an inch in diameter, which usually contains 150 or 160 spherical eggs of a yellow colour, cemented together in a subglobose mass, and enveloped in fine, soft, yellow silk.

Arachnologists affirm that the small net spun by *Epëira cucurbitina* is always placed horizontally; but this is a mistake, as it may frequently be seen in an inclined position.

EPËIRA BELLA. Pl. XXV, fig. 248.

Epëira bella, Meade, Annals and Mag. of Nat. Hist., third series, vol. vii, p. 20.

Length of the female, $\frac{1}{3}$ th of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of a posterior leg, $\frac{1}{3}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs are short, provided with hairs and fine spines, and are of a brownish-yellow hue, with red-brown annuli, those on the extremity of the femora of the first and second pairs being much the broadest; the fourth pair is the longest, then the first, and the third pair is the shortest; each tarsus is terminated by claws of the usual number and structure. The palpi resemble the legs in colour, but are without annuli. The cephalo-thorax is compressed before, rounded on the sides, abruptly sloped at the base, convex, glossy, slightly marked with punctures, and has an indentation in the medial line; the falces are powerful, conical,

vertical, and armed with a few teeth on the inner surface. These parts are of a brownish-red colour, the former having a band extending along each side, and a streak on each side of the posterior part of the cephalic region, which passes obliquely to the medial indentation, where the two meet in an angle; these bands and streaks have a brown hue, the indentation being much the darkest. The maxillæ are short, strong, straight, and enlarged and rounded at the extremity; the lip is semicircular, but somewhat pointed at the apex; and the sternum, which is heart-shaped, has conspicuous prominences on the sides, opposite to the legs, and is thickly marked with punctures. These parts are of a very dark-brown colour, faintly tinged with red, the maxillæ being rather the palest. The eyes are seated on black spots on the anterior part of the cephalo-thorax; the four intermediate ones form a square, the two posterior ones being the largest, and the two anterior ones, which are placed on a slight prominence, rather the smallest of the eight; those of each lateral pair are seated on a minute tubercle, and are near to each other, but not in contact. The abdomen is oviform, marked with numerous punctures, sparingly clothed with short, pale hairs, convex above, somewhat pointed before, where there are several short bristles, and projects over the base of the cephalo-thorax; it is of a yellow colour on the upper part and sides, and is densely reticulated with dark-brown, particularly on the latter; the medial line, which is the palest and least reticulated, comprises in its broader anterior region six circular, dark-brown depressions disposed in pairs, the two anterior pairs, which are the most conspicuous, forming a square; and between this square and the spinners there is a series of transverse, slightly sinuous, dark-brown lines; a broad, dark-brown band occupies the middle of the under part, and is bordered laterally with yellow; the sexual organs are rather prominent, and present a dark-brown, glossy convexity on each side, with a red-brown process in the middle, directed backwards, whose extremity is the broadest; the colour of the branchial opercula is dark-brown tinged with red.

The sexes bear a strong resemblance to each other, but the male, which is the smaller and darker coloured, has the anterior part of its cephalo-thorax more pointed. The femora of the first and second pairs of legs are of a brownish-black hue, except at their base and extremity, which have a yellowish-red tint, and a small, slightly curved, pointed process occurs at the extremity of the coxæ of the anterior pair, on the under side. Its palpi are short, and of a brownish-yellow colour, with the exception of the digital joint, which has a very dark-brown hue; the radial joint is produced on the outer side, and both it and the cubital joint have two long, curved bristles directed forwards from their extremity, in front; the digital joint is somewhat oval, with a process at its base, which is curved outwards, and notched at its extremity; it is convex and hairy externally, concave within, comprising the palpal organs; these organs are highly developed, complex in structure, with a process at their base, which projects a strong, prominent spine directed obliquely outwards and upwards, and a finer and more pointed one directed obliquely downwards, towards the inner side; their colour is very dark-brown intermixed with yellow-brown. The convex sides of the digital joints are directed towards each other.

In the autumn of 1860, Mr. R. H. Meade captured at Newton Purcel, in Oxfordshire, an adult female and an immature male of this interesting *Epëira*, which is remarkable for having the posterior pair of legs longer than the anterior pair. Mr. Meade had previously obtained several young individuals of this species in the same locality; and in the autumn of 1861 the Rev. O. P. Cambridge took an adult male and female at Bloxworth, in Dorsetshire.

EPËIRA LUTEA. Pl. XXV, fig. 249.

Epëira lutea, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 3.

— — Koch, Die Arachn., Band v, p. 62, tab. 161, fig. 378.

— — Koch, Ibid., Band xi, p. 123, tab. 388, figs. 926, 927.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{8}$ th, breadth, $\frac{1}{10}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{3}{8}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The cephalo-thorax is compressed before, rounded on the sides, convex, particularly in the cephalic region, glossy, sparingly supplied with whitish hairs, and has a large indentation in the medial line; it is of a pale, yellow-red colour, with a brownish-red line extending from the posterior, intermediate pair of eyes to the medial indentation, an obscure line of the same hue passes obliquely backwards from each lateral pair of eyes, and joins the former line near its posterior extremity, and a band of a somewhat deeper hue extends along each side, immediately above the fine, dark-brown, lateral margins. The eyes are disposed on the anterior part of the cephalo-thorax in two transverse rows; the four intermediate ones are seated on a prominence, and nearly form a square, the two posterior ones, which are rather nearer to each other than the anterior ones, being the largest of the eight; the eyes of each lateral pair are placed obliquely on a tubercle, but are not in contact. The falces are powerful, conical, vertical, and armed with teeth on the inner surface; the maxillæ are short, straight, and enlarged and rounded at the extremity; the lip is semicircular, but somewhat pointed at the apex; and the sternum is heart-shaped, with prominences on the sides, opposite to the legs. These parts are of a pale, yellow-red colour; the sternum, which is rather the darkest, has red-brown spots on its lateral prominences and posterior point, and the extremities of the maxillæ and lip have a pale, dull-yellowish hue. The legs are robust, provided with hairs and spines, and have a pale, yellow-red hue, with brown-red annuli; the first pair is the longest, then the second, and the third pair is the shortest; the tarsi are terminated by claws of the usual number and structure. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is oviform, thinly clothed with hairs, convex above, and projects greatly over the base of the cephalo-thorax; the colour of the upper part is pale-yellow, finely reticulated with brownish-red; a leaf-like space, bounded laterally by a slightly sinuous, red-brown line, finely bordered with pale-yellow externally, tapers from the anterior part to the spinners; this space comprises some small, pale-yellow spots; two depressed, dark-brown spots on each side of the medial line, in its broad, anterior part, are disposed in pairs, those of the posterior pair being the widest apart, and several obscure, pale-yellow, transverse bars, bordered with red-brown, occur on its posterior half; the superior region of the sides is somewhat darker than the upper part, and is marked with oblique, red-brown streaks; and the inferior region and under part have a reddish-brown hue, the latter having a curved, pale-yellow line on each side; the sexual organs are highly developed, prominent, with a long, depressed, membraneous process connected with their anterior margin;

it is transversely striated, curved backwards, recurved at its extremity, and has a glossy protuberance on each side of its base; the colour of these organs is yellow-brown, and that of the branchial opercula pale-yellow.

The male, according to M. Koch, has much longer legs than the female, and its colours are paler, but the design formed by their distribution is similar in both sexes. Its palpi are short, and the colour of its very prominent palpal organs, which are terminated by a small, curved, blackish hook, is rust-yellow and brown intermixed.

Adult females of this handsome *Epëira* were captured by the Rev. O. P. Cambridge, in the summer of 1861, near Tring, in Hertfordshire.

EPËIRA ORNATA.

Epëira ornata, Blackw., Annals and Mag. of Nat. Hist., second series, vol. vi, p. 342; and vol. x, p. 185.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{5}$ th, breadth, $\frac{1}{10}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{5}{16}$ ths; length of a leg of the third pair, $\frac{5}{24}$ ths.

The cephalo-thorax is somewhat oval, slightly compressed before, convex, and glossy, with an indentation in the medial line; the falces are powerful, conical, vertical, and armed with teeth on the inner surface; the maxillæ are short, strong, straight, and greatly enlarged at the extremity, which is rounded; the lip is semicircular, but somewhat pointed; the legs are robust and provided with hairs and spines; each tarsus is terminated by three claws of the usual structure, below which there are several smaller ones; and the palpi are short, with a curved, pectinated claw at their extremity. These parts have a dull-yellow hue tinged with red, the extremities of the maxillæ and lip being much the palest. The sternum is heart-shaped and of a dull-yellow colour marbled with red. The four intermediate eyes nearly form a square, the two anterior ones, which are seated on a small protuberance, being rather wider apart than the posterior ones; and the eyes of each lateral pair are placed obliquely on a tubercle, and are contiguous. The abdomen is oviform, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; it is of a fine, bright-red colour, the sides and under part being the palest, and has a series of minute indentations of a light-yellow hue extending along the upper part, on each side of the medial line; the branchial opercula have a yellow tint; and a long, pale process connected with the anterior margin of the sexual organs is directed backwards.

A specimen of this showy *Epëira*, in Mr. Francis Walker's cabinet, was taken in the south of England, in April, 1848, but the locality in which it was found is not stated.

EPËIRA CEROPEGIA. Pl. XXV, fig. 250.

Epëira ceropegia, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 51.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. xiv, p. 33.

— *sclopetaria*, Hahn, Die Arachn., Band ii, p. 46, tab. 57, fig. 131.

Miranda ceropegia, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 4.

— — Koch, Die Arachn., Band v, p. 51, tab. 158, fig. 370.

Length of the male, $\frac{3}{10}$ ths of an inch; length of the cephalo-thorax, $\frac{3}{20}$ ths, breadth, $\frac{1}{8}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{2}{5}$ ths; length of a leg of the third pair, $\frac{3}{10}$ ths.

The four intermediate eyes, which are seated on a prominence, form a square, and those of each lateral pair are placed obliquely on a tubercle, and are almost in contact. The cephalo-thorax is convex, glossy, sparingly supplied with hoary hairs, compressed before, rounded on the sides, and has a large indentation in the medial line; the falces are conical, vertical, and armed with teeth on the inner surface; the maxillæ are short, powerful, rounded at the extremity, and have a small, conical process on the outer side, immediately before the insertion of the palpi; and the lip is semicircular, but somewhat pointed. These parts are of a dark reddish-brown colour, the cephalic region and the extremities of the maxillæ and lip being the palest. The sternum is heart-shaped, thinly clothed with hoary hairs, and of a dark-brown tint. The legs are long, provided with hairs and spines, and of a reddish-brown hue, with obscure annuli of a deeper shade on the tibiæ and metatarsi; the tibiæ of the second pair are enlarged and convex towards the extremity, on the inner side, where there are several strong, prominent spines, and a slightly curved, conical process occurs at the extremity of the coxæ of the anterior pair, on the under side; the tarsi are terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi are short, and of a yellowish-brown colour, with the exception of the digital joint, which has a dark-brown tint; the cubital joint is rather prominent at the extremity, in front, whence project two long, curved bristles; the radial is much stronger than the cubital joint, and is provided with two apophyses, one of which, on the outer side, is large, obtuse, and protuberant at its base, and the other, situated underneath, is smaller and darker coloured; the digital joint is somewhat of an oval form, with a strong, obtuse process at the base curved outwards; it is convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed, very prominent, and complicated in structure, with several curved, pointed processes at their extremity, and are of a dark-brown hue tinged with red. The convex sides of the digital joints are directed towards each other. The abdomen is oviform, thinly clothed with longish, hoary hairs, convex above, and projects over the base of the cephalo-thorax; it is of an olive-brown colour, with a yellowish-white, dentated band, which tapers towards the spinners, extending along the middle of the upper part, and comprising a narrow, fusiform, olive-brown band freckled with yellowish-white; on each side there is an irregular, longi-

tudinal, yellowish-white line, whose continuity is sometimes interrupted, and an oblong spot of the same hue occurs in the middle of the under part; the colour of the branchial opercula is a dark reddish-brown.

According to M. Koch, the sexes are marked nearly alike, but the female is much the larger, and its legs are shorter than those of the male.

An adult male of this species was captured at Piercefield, near Chepstow, in Monmouthshire, in the autumn of 1853, by Mr. F. Walker, and was forwarded by him to Mr. R. H. Meade, from whom it was received in December, in the same year.

EPĚIRA ADIANTA. Pl. XXV, fig. 251.

EpĚira adianta, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 52.

— *segementata*, Sund. Vet. Acad. Handl., 1832, p. 247.

Miranda pictilis, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 4.

— — Koch, Die Arachn., Band v, p. 50, tab. 158, fig. 369.

Length of the female, $\frac{7}{32}$ nds of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{12}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{2}{3}$ ths; length of a leg of the third pair, $\frac{7}{32}$ nds.

The cephalo-thorax is compressed before, rounded on the sides, thinly clothed with hairs, convex, glossy, and has an indentation in the medial line; it is of a brownish-yellow colour, with a narrow, longitudinal, black band in the middle, and another, tinged with brown, extending above and nearly parallel to each lateral margin. The falces are powerful, conical, vertical, armed with a few teeth on the inner surface, and of a brownish-yellow colour, their extremity and a streak at the base, towards the outer side, having a brown-black hue. The maxillæ are short, straight, and enlarged and rounded at the extremity; the lip is semi-circular; and the sternum is heart-shaped, with minute eminences on the lateral margins, opposite to the legs. These parts have a brownish-black hue, the border of the maxillæ and the apex of the lip having a brownish-yellow tint. The legs are moderately long and robust, provided with hairs and erect spines, and are of a brownish-yellow colour faintly tinged with red, the extremities of the joints and the outer side of the upper part of the femora of the first and second pairs having a brown hue; the first pair is the longest, then the second, and the third pair is the shortest; each tarsus is terminated by the customary number of claws, and the palpi, which are short, and resemble the legs in colour, have a curved, pectinated claw at their extremity. The four intermediate eyes form a square, and those of each lateral pair are seated on a small tubercle and are almost in contact. The abdomen is oviform, sparingly clothed with hairs, convex above, and projects over the base of the cephalo-thorax; a band of a yellowish-white hue, broad and strongly dentated at its anterior part, but tapering to the spinners, extends along the middle; this band, which comprises an obscure, longitudinal, yellowish-brown streak whose margins are the darkest, is bordered by a dentated brown-black band, exterior to which there is a broad, dentated, yellowish-brown band whose

outer margin is the palest; on the sides there are oblique, brownish-black and yellowish-brown streaks somewhat confusedly blended, and the colour of the under part and of the spinners is brownish-black, the former comprising two longitudinal, yellowish-white lines, and two spots of the same hue occurring on each side of the latter; a prominent, brownish-black process directed backwards is connected with the sexual organs; and the colour of the branchial opercula is dark-brown.

The male is smaller than the female, but it resembles her in colour. A slightly curved, conical, pointed process projects at right angles from the extremity of the coxæ of the anterior legs, on the under side. The cubital joint of the palpi has two long bristles at the extremity of its upper surface, which are directed forwards; the radial joint projects a large, obtuse, dark-brown apophysis from its inner side, and a smaller, pointed one from its outer side; the digital joint is oval, with a large, obtuse, glossy process at its base, which is curved outwards; it is of a dark-brown colour, convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed, complicated in structure, with several strong, prominent processes on the under side, and are of a dark-brown colour partially tinged with yellowish-brown; the convex sides of the digital joints are directed towards each other.

Specimens of this species were captured in Dorsetshire, and in the New Forest, Hampshire, by the Rev. O. P. Cambridge, in 1857 and 1858; and in the latter year an immature male, taken in Leicestershire, which had to undergo its final ecdysis, was received from Mr. R. H. Meade.

EPËIRA FUSCA. Pl. XXVI, fig. 252.

Epëira fusca, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 84.

— — Blackw., Linn. Trans., vol. xix, p. 127.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 186.

— *Menardi*, Latr., Gen. Crust. et Insect., tom. i, p. 108.

Meta fusca, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 7.

— — Koch, Die Arachn., Band viii, p. 118, tab. 285, figs. 685—687.

Length of the female, $\frac{7}{16}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{4}$ th, breadth, $\frac{1}{8}$ th; breadth of the abdomen, $\frac{7}{16}$ ths; length of an anterior leg, $1\frac{3}{10}$ ths; length of a leg of the third pair, $\frac{4}{5}$ ths.

The legs are long, provided with numerous erect, black spines, and of a red-brown hue, with broad, brownish-black annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The cephalo-thorax is large, convex, glossy, compressed before, truncated in front, rounded on the sides, and has a large indentation in the medial line; it is of a reddish-brown colour, with brownish-black lateral

margins, and a band of the same hue extending along the middle, which increases in breadth as it approaches the eyes, where it becomes slightly bifid. The four intermediate eyes nearly form a square; the two anterior ones are seated on a slight prominence, and those of each lateral pair are placed obliquely on a tubercle and are almost in contact. The falces are powerful, conical, vertical, and armed with teeth on the inner surface; the maxillæ are straight, robust, convex underneath, and enlarged at the extremity, which is rounded; and the lip is semicircular. These parts have a dark red-brown hue, the extremities of the maxillæ and lip being much the palest. The sternum is heart-shaped, with prominences on the margins, opposite to the legs and lip, and has a brownish-black tint. The abdomen is oviform, glossy, convex above, and projects over the base of the cephalo-thorax; the upper part is of a yellowish or reddish-brown hue, with a large, oval, brownish-black spot in the anterior region, on each side of the medial line; these spots are almost united in front by a narrow band of the same tint, which proceeds from each of them; between the oval spots and the spinners there is a series of curved, transverse, brownish-black bars, which diminish in length as they approach the anus; the sides are of a brownish-black colour, freckled with dull-yellow, and have a slightly curved band of a yellowish hue extending from the anterior part to the spinners, on each side of which organs there are one or two yellow spots; the under part is of a dark red-brown or brownish-black hue, bordered on each side by an obscure, yellowish band; and the colour of the branchial opercula is pale-yellow.

The male is smaller than the female, but it resembles her in the design formed by the distribution of its colours. The cubital and radial joints of its palpi are short; the latter is rather the larger and projects a small, pointed apophysis from its extremity, in front; the digital joint is of an irregular, complex form, having a strong, prominent, corneous process in front, which has several minute protuberances on its under side, and a smaller, membranous process on the outer side, whose extremity is enlarged, somewhat rounded, and supplied with long hairs; the principal part of the joint is of a rhomboidal figure, gibbous at the base, convex, hairy, and provided with some erect spines externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and have at their extremity a strong, corneous, pointed process, a long and nearly straight spine, and, exterior to both, a large, corneous process which terminates in a fine, transparent membrane; their colour is reddish-brown, the corneous parts being much the darkest. The convex sides of the digital joints are directed towards each other.

The young, when they quit the cocoon, have a very dark hue, with the exception of the anterior and lateral regions of the upper part of the abdomen, which are marked with white, and two pale-yellow spots on its under part.

Caves, cellars, overhanging banks and other obscure places constitute the principal haunts of *Epëira fusca* in North Wales. In autumn the female fabricates a large oviform cocoon of white silk of so delicate a texture that the eggs, connected together by silken lines in a globular mass a quarter of an inch in diameter, may be seen distinctly within it. Its transverse axis measures about eleven tenths, and its conjugate axis eight tenths of an inch, and it is attached by numerous lines, generally forming a short pedicle at one extremity, to the walls or roofs of the places it inhabits. The eggs, which are yellow and spherical, are between 400 and 500 in number.

In transferring this species and *Epëira antriada*, included in the genus *Meta* ('Uebers.

des Arachn. Syst., erstes Heft, p. 6), from the *Epëiridæ* to the *Theridiidæ*, and thus widely separating them from a species so closely allied as *Epëira inclinata*, which is suffered to remain in the former family, M. Koch appears to have lost sight of those principles of affinity and analogy which afford the only safe guide in the classification of natural objects.

EPËIRA ANTRIADA. Pl. XXVI, fig. 253.

Epëira antriada, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 83.

— — Blackw., Linn. Trans., vol. xix, p. 128.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 186.

Meta muraria, Koch, Die Arachn., Band viii, p. 125, tab. 288, figs. 693, 694.

Length of the female, $\frac{5}{12}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{6}$ th, breadth, $\frac{1}{8}$ th; breadth of the abdomen, $\frac{1}{3}$ th; length of an anterior leg, $\frac{3}{4}$ ths; length of a leg of the third pair, $\frac{3}{8}$ ths.

The cephalo-thorax is convex, glossy, compressed before, truncated in front, rounded on the sides, and has a large indentation in the medial line; it is of a pale yellowish-brown colour, with black lateral margins, a few obscure, transverse, black streaks on the sides, and a band of the same hue extending along the middle, which increases in breadth as it approaches the eyes, where it comprises several yellowish-brown spots. The four intermediate eyes nearly form a square; the two anterior ones are seated on a small prominence, and those of each lateral pair are placed obliquely on a tubercle and are almost in contact. The falces are powerful, conical, convex near the base, in front, somewhat inclined towards the sternum, armed with teeth on the inner surface, and of a reddish-brown hue, with a blackish spot on the frontal convexity. The maxillæ are robust, straight, and enlarged and rounded at the extremity; and the lip is nearly semicircular. These parts are of a dark reddish-brown colour, the inner surface of the maxillæ being the palest. The sternum is heart-shaped, with prominences on the sides opposite to the legs, and has a brownish-black tint. The legs are long, provided with hairs and erect, black spines, and are of a light reddish-brown colour, the thighs being the palest, with black spots and brownish-black annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is oviform, thinly clothed with short hairs, convex above, and projects over the base of the cephalo-thorax; on the upper part there is a large, brown, leaf-like mark, with blackish, sinuous margins, whose anterior part, which is the broadest, is mottled with black and yellowish-white, and an obscure, dark-brown, dentated band extends along the middle; four minute indentations, marked by small, yellowish-white spots, describe a quadrangle in the anterior region of the leaf-like mark, and the sides are mottled and streaked with black, brown, and yellow; on the under part there is a broad, longitudinal, black band,

interrupted by a brown patch near the spinners which sometimes comprises a yellowish spot; this band has yellow lateral borders, and there are two spots of the same hue on each side of the spinners; the colour of the branchial opercula is yellowish-white. This species varies greatly in colour, some individuals being much darker and less distinctly marked than others.

The design formed by the colours of the sexes is similar, but the male is smaller than the female. The cubital and radial joints of its palpi are short, and the latter, which is the stronger, has a minute apophysis at its extremity, in front; the digital joint consists of three parts; one, which projects boldly in front, is curved, glossy, transversely striated above, and has a thin membrane connected with it; another, united to the base of the curved part on the outer side, is slender and hairy; and the third, which is much the largest, is somewhat oval, contracted at the base, convex and hairy externally, and concave within; all are connected with the palpal organs, which are moderately developed, not very complicated in structure, and of a red-brown colour. The convex sides of the oval parts of the digital joints are directed towards each other.

Obscure damp situations are generally resorted to by this spider, which is plentiful in many parts of England and Wales, and also occurs in Scotland and Ireland. It spins an extensive net with an open circular space at the centre, which it usually occupies when watching for its prey; from this station it drops quickly to the ground on being disturbed, regaining it when the danger is past by means of a line drawn from the spinners in its descent, and previously attached to the circumvolution of the unadhesive line bounding the central aperture. Like *Tetragnatha extensa*, it has the habit of extending the first and second pairs of legs in a line with the body.

Immature individuals of the species *Epëira antriada*, *Epëira inclinata*, *Epëira cucurbitina* and *Epëira diadema*, and adults of the species *Linyphia minuta* and *Linyphia tenuis*, are frequently infested by the larva of the *Polysphincta carbonaria* of Gravenhorst, which feeds upon their fluids and ultimately occasions their death. Since the publication of the account of this parasite in the 'Annals and Magazine of Natural History,' vol. xi, p. 1, it has been observed that the colour of the larva, after its final change of integument, becomes dark-brown, streaked and spotted with white, particularly on the sides, and that a series of dorsal prolegs is developed on the segments of its body comprised between the third and tenth, both inclusive. These dorsal prolegs are short, and, with the exception of that on the tenth segment, are more or less bifid at the summit; on their extremities are disposed numerous fine curved processes or claws, with which the larva, when about to fabricate its cocoon, attaches itself to the lines spun by its victim. Only two instances are noticed by Messrs. Kirby and Spence in their 'Introduction to Entomology,' sixth edition, vol. ii, pp. 227, 228, of the larvæ of insects having prolegs situated on their backs.

EPEIRA CELATA. Pl. XXVI, fig. 254.

Epëira celata, Blackw., Linn. Trans., vol. xviii, p. 668.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 187.

Length of the female, $\frac{7}{10}$ ths of an inch; length of the cephalo-thorax, $\frac{3}{20}$ ths, breadth, $\frac{1}{3}$ th; breadth of the abdomen, $\frac{1}{3}$ th; length of an anterior leg, $\frac{2}{3}$ rds; length of a leg of the third pair, $\frac{5}{16}$ ths.

The abdomen is oviform, hairy, convex above, and projects over the base of the cephalo-thorax; it is mottled with black and brown, and has an obscure, yellowish, curved line on each side of the anterior region of the upper part, and a broad, yellow band extending along the middle; this band, which comprises a fine, longitudinal, ramified line of a darker hue, is narrowest at its anterior extremity, near which a short, yellow line crosses it at right angles; on each side of the middle of the brownish-black under part there is a longitudinal, yellow line; and the colour of the branchial opercula is pale-brown. The cephalo-thorax is convex, glossy, compressed before, truncated in front, and rounded on the sides, which are marked with slight furrows converging towards a large indentation in the medial line; its colour is pale-brown, with black margins, a few transverse, black streaks on the sides, and a band of the same hue extending along the middle, which increases in breadth as it approaches the eyes, where it comprises several pale-brown spots. The four intermediate eyes nearly form a square; the two anterior ones are seated on a slight prominence, and those of each lateral pair are placed obliquely on a small tubercle, and are almost in contact. The falces are powerful, conical, convex near the base, in front, armed with teeth on the inner surface, and inclined towards the sternum; their colour is very dark-brown tinged with red. The maxillæ are straight, enlarged and rounded at the extremity, and of a dark reddish-brown hue. The lip is semicircular and of a brownish-black colour, having a faint tinge of red at the apex, which is prominent. The sternum is heart-shaped, with eminences on the sides, opposite to the legs, and has a brownish-black tint. The legs are long, provided with hairs and erect, black spines, and of a yellowish-brown hue, with black spots and annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity.

The male is smaller than the female, but it resembles her in colour. The cubital and radial joints of its palpi are short, and the latter, which is the stronger, has a small pointed apophysis at its extremity, in front; the digital joint consists of three parts; one, which projects boldly in front, is curved, glossy, transversely striated above, and has a thin membrane connected with it; another, united to the base of the curved part on the outer side, is slender and hairy; and the third, which is much the largest, is somewhat oval, contracted at its base, convex and hairy externally, and concave within; all are connected with the palpal organs, which are moderately developed, not very complicated in structure, and

of a reddish-brown colour. The convex sides of the oval parts of the digital joints are directed towards each other.

M. Walckenaer has disposed of *Epëira celata* as a synonym of *Epëira fusca* ('Hist. Nat. des Insect. Apt.,' t. iv, p. 471); but it differs materially from that species in size, structure, colour, and economy, and has a much closer affinity with *Epëira antriada*. It inhabits damp caverns and hollow banks in Denbighshire and Caernarvonshire, to the sides of which the female, in the month of May, attaches a subglobose cocoon of whitish silk of a loose texture, measuring about half an inch in diameter; in it she deposits between 200 and 300 spherical eggs of a yellow colour, agglutinated together in a lenticular form.

EPËIRA INCLINATA. Pl. XXVI, fig. 255.

Epëira inclinata, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 82.

— — Sund., Vet. Acad. Handl., 1832, p. 250.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 187.

Zilla reticulata, Koch, Die Arachn., Band vi, p. 142, tab. 214, figs. 532, 533.

Titulus 1, Lister, Hist. Animal. Angl. De Aran., p. 24, tab. 1, fig. 1.

Length of the female, $\frac{7}{8}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{9}$ th, breadth, $\frac{1}{12}$ th; breadth of the abdomen, $\frac{1}{6}$ th; length of an anterior leg, $\frac{13}{24}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The four intermediate eyes nearly form a square; the two anterior ones are seated on a small prominence, and those of each lateral pair are placed obliquely on a tubercle and are almost in contact. The cephalo-thorax is convex, glossy, compressed before, truncated in front, rounded on the sides, and has a large indentation in the medial line; it is of a pale yellowish-brown colour, with black lateral margins, a black band extending along the middle, which is bifid before, and a short streak of the same hue directed backwards from each lateral pair of eyes. The falces are powerful, conical, convex near the base, in front, somewhat inclined towards the sternum, armed with teeth on the inner surface, and of a yellowish-brown hue, with a blackish spot on the frontal convexity. The maxillæ are strong, straight, enlarged and rounded at the extremity, and have a brownish-black tint, being paler towards the inner surface. The lip is nearly semicircular; and the sternum is heart-shaped, with prominences on the sides, opposite to the legs. These parts are of a brownish-black colour, the latter being rather paler in the medial line. The legs are long, provided with hairs, and erect, black spines, and of a yellow-brown hue, with brownish-black spots and dark annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is oviform, sparingly clothed with short hairs, convex above, and projects over the base of the cephalo-thorax; on the upper part there is a large, leaf-like mark, having black, sinuous margins, whose anterior part, which is the

broadest, comprises two large, yellowish-white marks; the form of the anterior one is irregular, that of the posterior one triangular, and both are bisected by a fine, ramified, brown line; between the base of the triangular mark and the spinners there are transverse black, brown, and yellowish-white bars, and on each side of the leaf-shaped mark there is a broad, dentated band of a yellowish-white or red-brown colour; the sides have a brownish-black hue mottled with yellow, and the under part, which is of a yellowish colour reticulated with brown, has a broad, brownish-black band, bounded on each side by a yellow line, extending along the middle; two yellow spots occur on each side of the spinners, and the branchial opercula have a yellowish-brown tint, their inner margin being somewhat paler. This species varies greatly in colour, some individuals being much darker than others.

The male is smaller and darker coloured than the female, and its legs, which are without annuli, have a red-brown tint. The cubital and radial joints of its palpi are short, the latter, which is the stronger, having a minute apophysis at its extremity, in front; the digital joint consists of three parts; one, which is straight and glossy, projects in front; another, united to the base of the former on the outer side, is slender and hairy; and the third, which is much the largest, is somewhat oval, greatly contracted at its base, convex and hairy externally, and concave within; all are connected with the palpal organs, which are moderately developed, not very complicated in structure, and of a red-brown colour. The convex sides of the oval parts of the digital joints are directed towards each other.

Epëira inclinata abounds in many parts of Great Britain and Ireland, but seems to prefer districts which are well wooded. It spins in the intervals between the branches of trees and shrubs a net similar in design to that constructed by *Epëira antriada*, and, like that species, drops quickly, on being disturbed, from its station in the circular aperture at the centre of its snare, drawing from the spinners in its descent a line which enables it speedily to regain its former position.

In autumn the female attaches to the under side of stones, fragments of rock, and lichens growing on old trees, several globular cocoons of whitish silk of a loose texture, measuring, on an average, three eighths of an inch in diameter; each contains from 80 to 140 spherical eggs of a pale-yellow colour, cemented together in a globular mass.

An adult female of this species, captured in August, 1842, was entirely destitute of the left intermediate eye of the posterior row, and the right intermediate eye of the same row had not half of the usual size; and in another adult female, received from the Rev. Hamlet Clark, in the autumn of the same year, the right intermediate eye of the posterior row had not one eighth of the natural size, being merely rudimentary.

EPËIRA ALBIMACULA. Pl. XXVI, fig. 256.

Epëira albimacula, Blackw., Annals and Mag. of Nat. Hist., second series, vol. xiv, p. 33.

Zilla — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 5.

— — Koch, Die Arachn., Band vi, p. 144, tab. 215, figs. 534, 535.

Length of the male, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{16}$ th; length of an anterior leg, $\frac{5}{16}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs are long, slender, provided with hairs and fine spines, and of a yellowish-brown colour; the superior surface of the femora of the first and second pairs has a brownish-black tint, and the third and fourth pairs are marked with obscure annuli of the same hue; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, and has an indentation in the medial line; it is of a yellowish-brown hue, the cephalic region and the lateral margins being the darkest. The four intermediate eyes form a square, and those of each lateral pair are placed obliquely on a tubercle and are almost in contact; the two posterior eyes of the square are the largest of the eight, and the anterior ones are seated on a prominence. The falces are conical, vertical, and armed with teeth on the inner surface; the maxillæ are short, strong, straight, rounded at the extremity, and have a conical process on the outer side, immediately before the insertion of the palpi; the lip is semicircular, but somewhat pointed. These parts are of a dark-brown colour slightly tinged with red. The sternum, which is heart-shaped, has a yellowish-brown tint, with darker margins. The palpi are short and of a yellowish-brown hue; the radial joint is stronger than the cubital and has an obtuse protuberance on the outer side; the digital joint is somewhat oval, with a slender process at the base curved outwards; it is convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed, very prominent, complicated in structure, with a yellowish-brown convexity on the outer side, and are of a very dark-brown colour slightly tinged with red. The convex sides of the digital joints are directed towards each other. The abdomen is oviform, thinly clothed with hairs, convex above, projecting over the base of the cephalo-thorax; on the upper part there is a broad, leaf-like mark, which tapers to the spinners, and has dentated lateral margins bordered with white; it is of a brownish-black colour freckled with white, and has a transverse, white bar, minutely spotted with black, near its anterior extremity; the sides, which are whitish, are streaked and spotted with brownish-black, and the under part is of a brownish-black hue, with a curved, yellowish-white stripe on each side of the medial line; the colour of the branchial opercula is dark-brown.

From the description of this species given by M. Koch, it appears that the female is larger and more distinctly marked than the male, that its legs are much shorter, the femora, which are white, having a black annulus near their extremity, and that the palpi are marked with brown-black annuli.

In December, 1853, an adult male of this *Epëira* was received from Mr. R. H. Meade, which had been taken by Mr. F. Walker, at Piercefield, in the summer of the same year.

M. Walckenaer has placed the *Zilla* (*Epëira*) *albimacula* of M. Koch among the synonyma of *Epëira agalena* ('Hist. Nat. des Insect. Apt.,' t. ii, p. 37); but the males of these species differ in the design formed by the distribution of their colours, in the armature of their anterior legs, and in the structure of their palpal organs.

EPĚIRA ANTHRACINA. Pl. XXVI, fig. 257

Micryphantes anthracinus, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 11.

Singa anthracina, Koch, Die Arachn., Band xi, p. 154, tab. 393, fig. 950.

Length of the male, $\frac{1}{10}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{32}$ th; breadth of the abdomen, $\frac{1}{32}$ th; length of an anterior leg, $\frac{3}{20}$ ths; length of a leg of the third pair, $\frac{1}{10}$ th.

The cephalo-thorax is large, compressed before, rounded on the sides, convex, glossy, with a broad indentation in the medial line, and is of a very dark-brown colour. The eyes are nearly equal in size, and are disposed on the anterior part of the cephalo-thorax; the four intermediate ones form a square, the two anterior ones being seated on a prominence, and those of each lateral pair are placed obliquely on a tubercle, and are near to each other, but not in contact. The falces are powerful, conical, and inclined towards the sternum; the maxillæ are short, strong, straight, and enlarged and rounded at the extremity; and the lip is semicircular, but pointed at the apex. These organs are of a brownish-red colour, the last two being brown at the base. The legs are long, provided with hairs and fine spines, and of a yellowish-red colour, the anterior half of the femora of the first pair having a dark-brown hue; the first pair is the longest, then the second, and the third pair is the shortest. The palpi are short, and resemble the legs in colour, with the exception of the digital joint, which has a dark-brown hue; the cubital joint is rather prominent at its extremity, from which two long, curved bristles are directed forwards; the radial joint is somewhat produced on the inner side; the digital joint is oval, with a process at its base, curved outwards; it is convex and hairy externally, concave within, comprising the palpal organs; these organs are very highly developed, protuberant, complicated in structure, with a prominent, pointed process at their base, a black spine curved from the outer side round their extremity, and are of a brown hue. The convex sides of the digital joints are directed towards each other. The sternum is broad, heart-shaped, glossy, with small prominences on the sides, opposite to the legs; and the abdomen is oviform, thinly clothed with hairs, glossy, convex above, and projects over the base of the cephalo-thorax. These parts have a brownish-black hue.

Two adult males of this small *EpĚira* were taken by the Rev. O. P. Cambridge, at Lyndhurst, in the New Forest, in the summer of 1860. The female has not yet been discovered.

EPËIRA DIADEMA. Pl. XXVI, fig. 258.

Epëira diadema, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 29.

— — Latr., Gen. Crust. et Insect., tom. i, p. 106.

— — Sund., Vet. Acad. Handl., 1832, p. 235.

— — Hahn, Die Arachn., Band ii, p. 22, tab. 45, fig. 110.

— — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 2.

— — Koch, Die Arachn., Band xi, p. 103, tab. 384, fig. 910.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 188.

Titulus 2, Lister, Hist. Animal. Angl. De Aran., p. 28, tab. 1, fig. 2.

Length of the female, $\frac{3}{8}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{4}$ th, breadth, $\frac{1}{5}$ th; breadth of the abdomen, $\frac{3}{8}$ ths; length of an anterior leg, $\frac{3}{8}$ ths; length of a leg of the third pair, $\frac{1}{2}$.

The cephalo-thorax is convex, clothed with pale yellowish-brown hairs, compressed before, truncated in front, rounded on the sides, and has a large indentation in the medial line; it is of a pale yellowish-brown colour, with a fine, brown line on the margins, a broad, dark-brown band extending along each side and in front, and another, of the same hue, in the middle, which increases in breadth as it approaches the eyes. The four intermediate eyes are seated on a slight protuberance and nearly form a square, those of each lateral pair being placed obliquely on a tubercle and almost in contact. The falces are short, strong, conical, vertical, armed with teeth on the inner surface, and of a brownish-black colour, the extremity having a yellowish-brown hue. The maxillæ are straight, powerful, and greatly enlarged at the extremity, which is rounded; the lip is nearly semicircular, but somewhat pointed; and the sternum is heart-shaped, with prominences on the margin, opposite to the legs and lip. These parts are of a blackish colour, with the exception of the extremities of the maxillæ and lip, which have a yellow tint. The legs are robust, provided with hairs and numerous erect spines, and of a yellowish-brown colour, with dark-brown annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is large, somewhat oviform, with a slight, obtuse, conical protuberance on each side of the anterior extremity of the upper part, sparingly clothed with hairs, convex above, and projects greatly over the base of the cephalo-thorax; on the upper part there is a brown, leaf-like mark, which decreases in breadth as it approaches the spinners, and has dark, sinuous margins finely bordered with white, and white spots in its anterior region; it is bisected longitudinally by a line consisting of white or pale-yellow streaks and spots, which is intersected by three similar lines, giving it the form of a triple cross; on each side of the leaf-like mark there is a broad, sinuous, yellowish-brown band obscurely spotted with white; the sides and under part are of a dark-brown hue, mottled with dull yellowish-white, and along the middle of the latter there is a broad, brownish-black band, bordered anteriorly by two yellowish-white lines which are enlarged at their posterior extremity; a long, curved, wrinkled, membraneous, flesh-coloured process, directed back-

wards, is in connexion with the prominent sexual organs; and the branchial opercula are of a pale-brown hue, the inner margin having a tinge of yellow. This species varies from light yellowish-brown to brownish-black, but, notwithstanding the differences in its predominant tint, it may readily be distinguished by the peculiarity of the design formed by the distribution of the colours on its abdomen.

Though the male bears a marked general resemblance to the female, yet it differs from her in various particulars. It is much smaller, and the dark bands on its cephalo-thorax are not so conspicuous; its falces are less powerful, and of a yellowish-brown hue; a small, conical process occurs on the outer side of its maxillæ, immediately before the insertion of the palpi, and these organs, with the lip and sternum, are of a red-brown colour, with the exception of the extremities of the maxillæ and lip, which have a yellowish-brown tint; the coxæ of its anterior legs have a conical process at the extremity, on the under side, and a similar process is situated at the base of the coxæ of the second pair, whose tibiæ are more robust than those of the other legs, and are provided with two parallel rows of short, strong, black spines on their anterior surface; its palpi are short, and of a yellowish-brown hue; the cubital joint is rather prominent at its extremity, in front, whence project two long bristles, and the radial joint is protuberant on the outer side; the digital joint has somewhat of a narrow, elongated, oval form, with an obtuse, brownish-black process at its base, curved outwards; it is convex and hairy externally, concave within, and comprises the palpal organs, which are very highly developed, very protuberant, and complicated in structure, having a pale, prominent process on the outer side, and several pointed ones at the extremity, and their colour is red-brown, intermixed with yellowish-brown. The convex sides of the digital joints are directed towards each other.

This spider is plentiful in Great Britain and Ireland, constructing an extensive net, without any circular opening at the centre, among gorse, heath, and bushes. In common with the other species belonging to the genus *Epëira*, its head is always directed downwards when occupying a position at the centre of its snare, and as it is supported on such occasions chiefly by the *sustentacula* and a line connecting the spinners with its station, the reason of the fact is apparent.

Epëira diadema and some of its congeners envelope their prey in a sheet of web by the following curious process. Causing the victim to rotate by the action of the third pair of legs and the palpi, the first pair of legs also being frequently employed in a similar manner, they extend the spinners laterally, and applying to them alternately the *sustentaculum* of each posterior leg, they seize and draw out numerous fine lines in the form of a fillet, which they attach to their revolving prey, and thus involve it in a dense covering of silk from one extremity to the other. By means of this stratagem they are capable of overcoming formidable and powerful insects, such as wasps, bees, and even large beetles.

In October the female of this species attaches to the inferior surface of stones a sub-globose cocoon of yellow silk of a loose texture, measuring two thirds of an inch in diameter, in which she deposits between 700 and 800 spherical eggs, of a yellow colour, agglutinated together in a lenticular form. Withered leaves and bits of dry fern are frequently distributed on the exterior surface of the cocoon. After deserting this nidus, the young spin a few lines, on which they group themselves into a compact mass, somewhat resembling the granulated fruit of the *Rubi*.

EPËIRA ANGULATA. Pl. XXVII, fig. 259.

Epëira angulata, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 2.

— — Koch, Die Arachn., Band xi, p. 77, tab. 379, figs. 892—895.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. xx, p. 502.

— *cornuta*, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 123.

Length of the female, $\frac{9}{20}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{4}$ th, breadth, $\frac{3}{16}$ ths; breadth of the abdomen, $\frac{1}{4}$ th; length of an anterior leg, $\frac{4}{5}$ ths; length of a leg of the third pair, $\frac{9}{20}$ ths.

The legs are robust, provided with hairs and spines, and of a yellowish-brown colour, with brown-black annuli; each tarsus is terminated by three claws of the usual structure, and below them there are several smaller ones. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity. The cephalo-thorax is slightly convex, compressed before, rounded on the sides, and has an indentation in the medial line; it is densely clothed with yellowish-gray hairs, and of a dark-brown colour; an obscure band extends along the middle, another on each side, and the lateral margins are the darkest. The four intermediate eyes, which are seated on a protuberance, nearly form a square, and those of each lateral pair are placed obliquely on a tubercle and are near to each other, but not in contact. The falces are powerful, conical, vertical, and armed with teeth on the inner surface; the maxillæ are straight, short, strong, and greatly enlarged at the extremity, which is rounded; the lip is nearly semicircular, but somewhat pointed at the apex. These parts are of a dark-brown colour, with the exception of the extremities of the maxillæ and lip, which have a yellowish-brown hue. The sternum is heart-shaped, with prominences on the sides, opposite to the legs; it has a dark-brown hue, with a broad, longitudinal, yellow-brown band in the middle. The abdomen is hairy, and somewhat oviform, a large, prominent, conical protuberance situated on each side of the anterior extremity of the upper part giving it a triangular appearance; it is convex above, and projects greatly over the base of the cephalo-thorax; on the upper part there is a brown-black, leaf-like mark, which is darkest on the strongly dentated margins, and decreases in breadth as it approaches the spinners; it is finely bordered by a yellowish-white line, is obscurely freckled with pale-brown, and its anterior part comprises one or two yellowish-white, angular lines, whose vertices are directed forwards, and to these succeed short streaks and spots of the same hue; the anterior part of the conical protuberances and the sides have a yellowish-brown colour spotted with dark-brown; on the upper part of the latter the spots, which are confluent, form oblique rows, and on their lower part horizontal ones; the underpart is of a brown-black colour, with two conspicuous, parallel, yellow spots near the spinners; the sexual organs are prominent, and have in connexion with them a long, curved, membraneous process, which is darkest coloured at its extremity.

The male is smaller than the female, and the conical protuberance on each side of the

anterior extremity of the upper part of its abdomen is proportionally minute ; its legs are long, the usual colour of the femora is black, and the tibiæ of the second pair are curved and dilated. The palpi are short, and of a brownish-yellow colour ; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a dark, reddish-brown hue. The colours, and the design formed by them, are similar in both sexes.

An adult female *Epëira angulata*, and an immature male which had to undergo its final ecdysis, were taken in 1856, near Blandford, in Dorsetshire, by the Rev. O. P. Cambridge.

The descriptions of *Epëira angulata* given by arachnologists are, in general, so brief and imperfect as to render any attempt to reconcile the perplexed synonyma of this species almost hopeless.

EPËIRA BICORNIS. Pl. XXVII, fig. 260.

Epëira bicornis, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 124.

— — Blackw., Linn. Trans., vol. xix, p. 126.

— — Koch, Die Arachn., Band xi, p. 92, tab. 382, figs. 902, 903.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 248.

— *arbustorum*, Koch, Uebers. des Arachn. Syst., erstes Heft., p. 3.

Length of the female, $\frac{5}{24}$ ths of an inch ; length of the cephalo-thorax, $\frac{1}{9}$ th, breadth, $\frac{1}{12}$ th ; breadth of the abdomen, $\frac{3}{20}$ ths ; length of an anterior leg, $\frac{1}{3}$ rd ; length of a leg of the third pair, $\frac{1}{2}$ th.

The abdomen is short, broad, somewhat oviform, with a bold, conical protuberance on each side of the anterior extremity of the upper part, and projects over the base of the cephalo-thorax ; a large, reddish-brown, leaf-like mark on the upper part, which tapers to the spinners, and has dark, sinuous margins, comprises a green spot, situated between the tubercles ; the anterior part, exterior to the extremity of the leaf-like mark, and the sides have a dull-green tint, mottled with yellowish-green, and a broad, brownish-black band, bordered by greenish-yellow, extends along the middle of the under part ; the sexual organs are very prominent, and have in connexion with them a small, pale, oval process, directed backwards ; and the colour of the branchial opercula is yellowish-brown. The cephalo-thorax is convex, compressed before, rounded on the sides, and has an indentation in the medial line ; it is of a dark-brown colour, and is clothed with pale, yellowish-brown hairs, which are densest in the cephalic region. The four intermediate eyes are seated on a protuberance, and nearly form a square, the two posterior ones being much the largest of the eight ; those of each lateral pair, which are the smallest, are placed obliquely on a tubercle, and are almost in contact. The falces are strong, conical, and armed with teeth on the inner surface ; the maxillæ are short, powerful, and greatly enlarged at the extremity ; the lip is triangular and pointed at the

apex; and the sternum is heart-shaped, with minute prominences on the sides, opposite to the legs. These parts are of a dark-brown colour, the falces being the darkest, and the maxillæ and lip having yellow-brown margins. The legs are robust, provided with hairs and spines, and of a pale, yellow-brown hue, with black annuli; and each tarsus is terminated by the customary number of claws of the usual structure. The palpi resemble the legs in colour, and have a curved, pectinated claw at their extremity.

The male is smaller and darker coloured than the female, and the conical protuberances on its abdomen are less prominent; its legs also, which are longer than hers, have a small, pointed process at the extremity of the coxæ of the anterior pair, on the under side, and the tibiæ of the second pair are amply provided with strong spines; a pointed process occurs near the extremity of the falces, in front, and another on the outer side of the maxillæ, immediately before the insertion of the palpi. Its palpi are short; the cubital joint has a long bristle projecting from its extremity, in front, and the radial joint, which is the stronger of the two, has a large, obtuse protuberance on the outer side, and a smaller one on the inner side; the digital joint is of an oblong oval form, and has an obtuse, glossy, black process, curved outwards, at its base; it is convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed, complicated in structure, and of a dark, reddish-brown colour. The convex sides of the digital joints are directed towards each other.

In the wooded parts of Denbighshire this rare species occurs on the trunks of trees. It pairs in June, and in July the female constructs a subglobose cocoon of light-brown silk of a loose texture, about one third of an inch in diameter, which includes her eggs.

EPËIRA CONICA. Pl. XXVII, fig. 261.

Epëira conica, Walck., Hist. Nat. des Insect. Apt., t. ii, p. 138.

— — Latr., Gen. Crust. et Insect., tom. i, p. 109.

— — Sund., Vet. Acad. Handl., 1832, p. 248.

— — Hahn., Die Arachn., Band ii, p. 45, tab. 57, fig. 130.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 249.

Singa — Koch, Uebers. des Arachn. Syst., erstes Heft., p. 6.

— — Koch, Die Arachn., Band xi, p. 145, tab. 392, figs. 943—945.

Titulus 4, Lister, Hist. Animal. Angl. De Aran., p. 32, tab. 1, fig. 4.

Length of the female from the anterior part of the cephalo-thorax to the extremity of the conical abdominal protuberance, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{1}{3}$ rd; length of a leg of the third pair, $\frac{3}{16}$ ths.

The abdomen has a large, conical protuberance situated near the middle of the upper part, which gives it somewhat of a triangular form when viewed laterally; it projects greatly

over the base of the cephalo-thorax, and its prevailing colour is yellowish-white ; the sides are marked with streaks and blotches of a pale, reddish-brown hue, a broad, irregular, blackish band, comprising several white marks, extends from the anterior part to the extremity of the conical protuberance, and the space between the protuberance and the spinners has a brown tint, with confluent, white spots constituting longitudinal and transverse lines ; the under part is black, and a large, angular, white mark, whose lower side is the broader, and whose vertex is directed obliquely downwards and outwards, occurs on each side of it ; the sexual organs are prominent, and of a dark, reddish-brown colour, with a somewhat cylindrical process, directed backwards, in connexion with their anterior margin ; and the branchial opercula have a brown tint. The cephalo-thorax is small, convex, glossy, compressed before, rounded on the sides, and has a broad indentation in the medial line ; the falces are long, powerful, armed with teeth on the inner surface, and slightly inclined towards the sternum, which is heart-shaped, and has small eminences on the sides, opposite to the legs ; the maxillæ are strong, and the lip is nearly semicircular, but somewhat pointed. These parts are of a very dark, reddish-brown or brownish-black colour, with the exception of the extremities of the maxillæ and lip, which have a pale, reddish-brown hue. The four intermediate eyes nearly form a square, the two anterior ones, which are rather wider apart than the posterior ones, being placed on a bold protuberance ; those of each lateral pair are seated obliquely on a minute tubercle, and are almost in contact. The legs are moderately long, sparingly provided with hairs and fine spines, and of a reddish-brown colour, the coxæ and femora being much the palest, with brown spots and annuli ; and each tarsus is terminated by the customary number of claws of the usual structure. The palpi have a slightly curved, pectinated claw at their extremity, and are of a pale, yellowish-brown colour, the extremity of the radial joint and the whole of the digital joint, except its base, having a dark, reddish-brown tint. This species varies greatly in the intensity and distribution of its colours, both in the immature and adult states, and young individuals have the conical protuberance on the upper part of the abdomen less perfectly developed than old ones ; but it may always be readily distinguished from other British *Epëiræ* by the singularity of its form.

There is much similarity between the sexes of *Epëira conica*, but the male is the darker coloured, and its cephalo-thorax is larger in proportion to the size of its abdomen. The femora of its first and second pairs of legs are of a brownish-black hue, with the exception of their bases, which have a yellowish-white tint ; those of the third and fourth pairs are brownish-black at their extremity only, the colour of the remaining portion and of all the coxæ being yellowish-white. The palpi are short and of a yellowish-brown hue, with the exception of the digital joint, which has a very dark-brown tint ; the cubital joint has a long bristle at its extremity, in front, and the radial joint, which is larger than the cubital, has an obtuse protuberance on its outer side ; the digital joint is of an oblong oval form, tapering to its extremity, and having an obtuse process at its base, directed outwards ; it is convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed, remarkably prominent, complicated in structure, and of a very dark-brown colour.

Mr. R. H. Meade has met with this remarkable spider in Buckinghamshire, and has received an adult male from Middlesex, in which county immature individuals of both sexes have also been obtained. Lister states that he has frequently seen *Epëira conica* in lofty

and umbrageous woods in Cambridgeshire and Yorkshire, and that it has the habit of attaching the dead bodies of the insects which it captures to two radii forming a right line above and below it when occupying the customary station at the centre of its snare.

EPËIRA TUBULOSA. Pl. XXVII, fig. 262.

Epëira tubulosa, Walck., Hist. Nat. des Insect. Apt., t. ii, p. 86.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 249.

Singa hamata, Koch, Die Arachn., Band iii, p. 42, tab. 88, figs. 197, 198.

— — Koch, Uebers. des Arachn. Syst., erstes Heft., p. 6.

— *melanocephala*, Koch, Die Arachn., Band iii, p. 44, tab. 88, fig. 199.

Titulus 7, Lister, Hist. Animal. Angl. De Aran., p. 40, tab. 1, fig. 7.

Length of the female, $\frac{1}{3}$ th of an inch; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{12}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{3}{20}$ ths.

The cephalo-thorax is convex, glossy, compressed before, rounded on the sides, and has an indentation in the medial line; the falces are conical, vertical, and armed with teeth on the inner surface; the maxillæ are short, powerful, and enlarged and rounded at the extremity; the lip is semicircular, but somewhat pointed; and the sternum is heart-shaped, with small eminences on the sides, opposite to the legs. These parts are of a dark-brown colour, the falces, maxillæ, and the extremity of the lip, which are the palest, having a tinge of red. The four intermediate eyes form a trapezoid whose posterior side is the shortest, and those of each lateral pair are placed obliquely on a small tubercle, but are not in contact; the anterior eyes of the trapezoid are the largest of the eight, and are seated on a protuberance. The legs are robust, provided with hairs and a few spines, and of a yellowish-brown hue, with obscure annuli of a deeper shade at the joints; each tarsus is terminated by the customary number of claws of the usual structure. The palpi resemble the legs in colour. The abdomen is of an oblong oviform figure, thinly clothed with hairs, glossy, convex above, and projects over the base of the cephalo-thorax; the upper part is of a dark-brown colour, the extremities being the darkest; a yellowish-white line, intersected at right angles by several yellowish-white streaks, extends along the middle, and a longitudinal one of the same hue passes above each side; the sides are of a yellowish-white colour marked with oblique, brown streaks; and the under part, which has a brownish-black tint, is bounded laterally by a yellowish-white line.

The sexes are similar in colour, but the male, which is the smaller, is somewhat darker and less distinctly marked than the female. The cubital and radial joints of its palpi are short; the digital joint is oval, and of a dark-brown hue; it is convex and hairy externally, concave within, comprising the palpal organs, which are highly developed, complicated in structure, and of a brown-black colour.

According to Lister, *Epëira tubulosa*, which appears to be a very local species, is sometimes found in great abundance in moist situations. In June the female constructs one or two lenticular cocoons of white silk, in which she deposits her eggs, of a pale-yellow colour.

An adult female was taken in 1856, by the Rev. O. P. Cambridge, near Blandford, in Dorsetshire.

EPËIRA CALVA. Pl. XXVII, fig. 263.

Epëira calva, Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 99 ;
and vol. xiv, p. 33.

Length of the female, $\frac{1}{8}$ th of an inch ; length of the cephalo-thorax, $\frac{1}{10}$ th, breadth, $\frac{1}{18}$ th ; breadth of the abdomen, $\frac{1}{10}$ th ; length of an anterior leg, $\frac{1}{8}$ th ; length of a leg of the third pair, $\frac{1}{8}$ th.

The four intermediate eyes, which are seated on a black prominence, describe a quadrilateral figure whose anterior side is slightly the shortest, and those of each lateral pair are placed obliquely on a small, black tubercle and are almost in contact ; the posterior eyes of the quadrilateral figure are the largest, and the anterior ones the smallest of the eight. The cephalo-thorax is compressed before, rounded on the sides, elevated and convex in the cephalic region, depressed behind, glossy, and of a very dark-brown colour, with a broad, yellowish-brown band in the middle, which decreases in breadth to its posterior extremity, where it has a yellowish-white tint. The falces are powerful, conical, vertical, armed with teeth on the inner surface, and of a reddish-brown colour, the base being the darkest. The maxillæ are short, straight, and enlarged and rounded at the extremity ; the lip is semicircular, but somewhat pointed. These parts are of a very dark-brown hue, their extremities being faintly tinged with red. The sternum is heart-shaped, with small prominences on the sides, opposite to the legs, and its colour is brownish-black. The legs are moderately long, provided with hairs and a few fine spines, and of a yellowish-brown colour, the femora being marked with brown, longitudinal streaks ; each tarsus is terminated by the customary number of claws of the usual structure. The palpi are short and of a yellowish-brown hue, the radial and digital joints being the darkest. The abdomen is oviform, glossy, convex above, and projects greatly over the base of the cephalo-thorax ; the upper part is of a pale, yellowish-brown colour, and is marked with four minute, brown spots, which form a quadrilateral figure whose anterior side is the shortest ; an irregular, dark-brown line extends from the anterior extremity, above each side, more than two thirds of its length, and contiguous to the exterior margin of these lines, which are most conspicuous at their extremities, there is a parallel band of yellowish-white ; the sides are of a dark-brown colour, freckled with paler brown, and the under part, which has a brownish-black hue, is bounded laterally by a yellowish-white band extending beyond the spinners ; the sexual organs are almost concealed by a scale-like process situated on each side of them.

An immature female of this interesting *Epëira* was received in October, 1853, from the

Rev. Hamlet Clark, who states that it was taken in Leicestershire; in 1858 immature specimens of both sexes were captured by the Rev. O. P. Cambridge in the New Forest; and in May, 1860, Mr. Cambridge found both sexes in a state of maturity, at Lyndhurst.

The male is smaller and darker coloured than the female, and the anterior half of the femora of the first and second pairs of legs has a brownish-black hue, but the design formed by the distribution of their colours is similar in both sexes. The cubital and radial joints of its palpi are short, the former, which is the stronger, projecting two long bristles, curved forwards, from its extremity, in front; the digital joint, which is oval, has a glossy process at its base, curved outwards, and is of a dark-brown hue; it is convex and hairy externally, concave within, comprising the palpal organs, which are very highly developed, protuberant, complex in structure, with two strong, curved processes, between which there is some brownish-yellow membrane, and a fine, prominent, slightly curved spine near their middle; their colour is brownish-black, with yellowish-brown intermixed. The convex sides of the digital joints are directed towards each other.

EPËIRA HERII. Pl. XXVII, fig. 264.

Epëira Herii, Hahn, Die Arachn., Band i, p. 8, tab. 2, fig. 5.

— — Walck., Hist. Nat. des Insect. Apt., t. ii, p. 89.

Singa — Koch, Uebers. des Arachn. Syst., erstes Heft., p. 6.

Length of the female, $2\frac{3}{4}$ lines, Hahn.

The cephalo-thorax is compressed before, rounded on the sides, glossy and convex, particularly in the cephalic region; the falces are strong, conical, and vertical; the maxillæ are short, straight, and rounded at the extremity; the lip is semicircular, but somewhat pointed at the apex; and the legs and palpi are provided with hairs and slender spines. These parts are of a red-brown colour, the legs, palpi, and falces being much the palest, and the maxillæ and lip the darkest. The sternum is heart-shaped, with small prominences on the sides, opposite to the legs, and has a brownish-black hue. The eyes are seated on black spots on the anterior part of the cephalo-thorax; the four intermediate eyes form a square; the two anterior ones are placed on a tubercle, and the posterior ones are the largest of the eight; the eyes of each lateral pair are seated on a small tubercle, and are very near to each other, but not in contact. The abdomen is subcylindrical, glossy, thinly clothed with short hairs, slightly convex above, and projects over the base of the cephalo-thorax; it is of a brownish-black colour, with a pale-yellow or yellowish-white band in the medial line, and another of the same hue extending along the upper part of each side; a broad, longitudinal, dark-brown band, which extends to the spinners, and is bounded on each side by a pale-yellowish line, occupies the middle of the under part.

This spider varies considerably in colour according to age, young individuals being of a red-brown hue where that of adults is brownish-black; but the design formed by the distribution of their colours is similar in both sexes.

In 1858 numerous immature specimens of both sexes were found by the Rev. O. P. Cambridge at Lyndhurst, in the New Forest.

M. Walckenaer has expressed a suspicion that *Epēira Herii* is a variety of *Epēira tubulosa*, but as the two maintain their specific characteristics both in the immature and adult states, there can be no doubt that they are distinct.

Genus—TETRAGNATHA, Latr.

Eyes disposed on the anterior part of the cephalo-thorax in two transverse rows, the four intermediate ones forming a trapezoid whose shortest side is before.

Maxillæ long, increasing in breadth from the base to the extremity.

Lip short and semicircular.

Legs long and slender; the first pair is the longest, then the second, and the third pair is the shortest.

TETRAGNATHA EXTENSA. Pl. XXVIII, fig. 265.

Tetragnatha extensa, Walck., Hist. Nat. des Insect. Apt., tom. ii, p. 203.

— Latr., Gen. Crust. et Insect., tom. i, p. 101.

— Sund., Vet. Acad. Handl., 1832, p. 256.

— Hahn, Die Arachn., Band ii, p. 43, tab. 56, fig. 129.

— Koch, Uebers. des Arachn. Syst., erstes Heft, p. 5.

— Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 249.

— *gibba*, Koch, Uebers. des Arachn. Syst., erstes Heft, p. 5.

Titulus, 3, Lister, Hist. Animal. Angl., De Aran., p. 30, tab. 1, fig. 3.

Length of the female, $\frac{3}{8}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{8}$ th, breadth, $\frac{1}{16}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{3}{8}$ ths; length of a leg of the third pair, $\frac{1}{4}$ th.

The eyes are seated on black spots; the four intermediate ones form a trapezoid whose anterior side is the shortest, and the lateral eyes of the four constituting the front row are the smallest of the eight. The cephalo-thorax is compressed before, truncated in front, rounded on the sides, slightly convex, glossy, sparingly clothed with short, light-coloured hairs, and has a large indentation in the medial line; the falces are prominent, very powerful, somewhat cylindrical, smaller at the base than at the extremity, widely divergent, and armed with a long, slightly curved fang and two rows of teeth on the inner surface; the maxillæ are long, straight, and increase in breadth from the base to the extremity. These parts are of a pale yellowish-brown hue, the maxillæ being the darkest. The lip is semicircular and prominent

at the apex, which has a reddish-brown tint, the colour of the base being dark-brown. The sternum is of an oblong heart-shape, with small eminences on the sides, opposite to the legs, and is of a dark-brown colour, with a pale reddish-brown, longitudinal streak in the middle. The legs are long, slender, provided with hairs and a few fine, erect spines, and have a pale yellowish-brown hue; each tarsus is terminated by three claws; the two superior ones are curved and pectinated, and the inferior one is inflected near its base. The palpi, which are slender, resemble the legs in colour, and have a curved, pectinated claw at their extremity. The abdomen is long, somewhat cylindrical, thinly clothed with short, fine hairs, and projects over the base of the cephalo-thorax; its colours are green, yellowish-green, and black, disposed in longitudinal bands; extending along the middle of the upper part there is a green band, which comprises a fine black line that gives off short lateral streaks of the same hue, the anterior ones crossing it at right angles, and the posterior ones being directed obliquely backwards, and on each side of the green band there is a broad band of yellowish-green; the under part has a green hue, with a black band along the middle, on each side of which there is a narrow band of yellowish-green; the colour of the branchial opercula and spinners is brown, and a fine brownish line passes from the latter obliquely along each side to the upper part. This species varies greatly in colour. The cephalo-thorax of the young, when about half grown, has a blackish band of a triangular form, whose vertex is directed backwards, extending along the middle; and the lateral margins, with several triangular marks projecting from them towards the centre, are of the same hue; their legs, also, have black annuli at the joints, and in other particulars they differ considerably from adults, but their peculiarities of structure and habit at once serve to distinguish them from every other British spider.

The male is smaller, lighter coloured, and less distinctly marked than the female, but its legs are longer, an anterior one measuring 1 inch; its falces, which are long and slender, have a fine, prominent, tooth-like process, inflected at the point, and a short, obtuse one situated near their extremity, in front, and the penultimate tooth of the upper row on their inner surface is much larger than the rest. The radial joint of the palpi is longer than the cubital, and clavate; the digital joint consists of two narrow, membraneous parts, covered with hairs externally, the shorter of which has a small but bold process on the inner margin, near its base; with these parts the palpal organs are connected; they are moderately developed, glossy, subglobose at the base, and terminate in two prominent, curved, black spines enveloped in membrane, and are of a reddish-brown colour.

This is the only species belonging to the genus *Tetragnatha* which has been found in Great Britain and Ireland. It frequents damp localities, constructing among bushes and plants in the vicinity of brooks, ditches and pools a slight net, having a circular aperture at the centre. The specific name, *extensa*, has reference to its habit of extending the first and second pairs of legs forwards and the posterior pair backwards, in a line with the body.

In June the female attaches to some object near her snare a subglobose cocoon, about one-fifth of an inch in diameter, composed of fine silk of a loose texture, which is either whitish with small tufts of a dull-green colour on its exterior surface, or else is of a dull-green colour with whitish tufts. The eggs deposited in different cocoons vary greatly in number; but there are seldom fewer than sixty or more than 214 in a single set; they are spherical, of a pale yellow colour, and are agglutinated together in a subglobose mass.

TRIBE SENOCULINA.

Family—DYSDERIDÆ.

The *Dysderidæ* occur in countries separated by wide intervals of sea, especially in longitude. Their falces are articulated either on an inclined plane or vertically; two branchial and two tracheal opercula occupy the usual situations on the inferior surface of the abdomen, which has three pairs of spinners at its extremity; and the tarsi are terminated by two claws and a scopula in some species, and in others, destitute of scopulæ, by three claws.

Cells and tubes of silk constructed on the under side of stones, among lichens growing on trees, and in crevices in rocks and walls, constitute the retreats of the spiders of this family, which commonly take their prey by surprise.

Genus—DYSDERA, Latr.

Eyes closely grouped on the anterior part of the cephalo-thorax in the form of a small oval, open in front.

Maxillæ long, straight, and enlarged where the palpi are inserted.

Lip of an elongated oval figure, somewhat hollowed, rounded, or truncated at the extremity.

Legs moderately long, the anterior or the posterior pair being the longest, and the third pair the shortest.

DYSDERA ERYTHRINA. Pl. XXVIII, fig. 266.

Dysdera erythrina, Walck., Hist. Nat. des Insect. Apt., tom. i, p. 261.

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| — | — | Latr., Gen. Crust. et Insect., tom. i, p. 90. |
| — | — | Hahn, Die Arachn., Band i, p. 7, tab. 1, fig. 3. |
| — | — | Koch, Uebers. des Arachn. Syst., erstes Heft, p. 20. |
| — | — | Koch, Die Arachn., Band v, p. 76, tab. 165, fig. 389. |
| — | — | Blackw., Linn. Trans., vol. xix, p. 128. |
| — | — | Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 250. |

Length of the female, $\frac{9}{20}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{5}$ th, breadth, $\frac{3}{20}$ ths; breadth of the abdomen, $\frac{3}{20}$ ths; length of an anterior leg, $\frac{11}{20}$ ths; length of a leg of the third pair, $\frac{2}{5}$ ths.

The two anterior eyes are the largest of the six. The legs are provided with short hairs, and have a red hue; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by two curved, pectinated claws, below which there is a scopula. The palpi resemble the legs in colour, and have a small, curved claw at their extremity. The cephalo-thorax is large, oval, convex, glossy, with a narrow indentation in the medial line; the falces are powerful, conical, prominent, and densely fringed with hairs on the inner surface; the maxillæ are pointed at the extremity, the inner surface of which is supplied with long hairs; the apex of the lip is hollowed; and the sternum is oval, thinly clothed with hairs, and has small eminences on the sides, opposite to the legs. These parts are of a deep-red colour. The abdomen is oviform, convex above, and projects a little over the base of the cephalo-thorax; it is sparingly clothed with short hairs, and of a yellowish-brown colour, in some instances tinged with red.

The male is rather smaller than the female, which it resembles in colour. The digital joint of its palpi is slightly dilated, and the palpal organs, connected with it by a short pedicle near the middle of the under side, project from it at right angles; they are pyriform, tapering to a fine, elongated, curved point, and are of a red colour.

Specimens of *Dysdera erythrina* have been taken under stones in the central parts of the city of Manchester; others have been captured in Cambridge, by Professor Potter and Mr. Alfred Bishop, and in Oxford by Mr. W. H. Baxter; Mr. F. Walker also has met with this spider on the south coast near the seashore, and Mr. R. Templeton has recorded two instances of its occurrence in Ireland.

DYSDERA RUBICUNDA. Pl. XXVIII, fig. 267.

Dysdera rubicunda, Koch, Die Arachn., Band v, p. 79, tab. 165, figs. 390, 391.

— — Blackw., Linn. Trans., vol. xix, p. 129.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 250.

Length of the male, $\frac{5}{16}$ ths of an inch; length of the cephalo-thorax, $\frac{3}{20}$ ths, breadth, $\frac{1}{3}$ th; breadth of the abdomen, $\frac{1}{3}$ th; length of an anterior leg, $\frac{1}{2}$.

The legs are provided with short hairs, and have a yellowish-red hue; the first pair is rather the longest, then the second, and the third pair is the shortest; each tarsus is terminated by two curved, pectinated claws, below which there is a small scopula. The palpi resemble the legs in colour; the digital joint is slightly dilated, and the palpal organs, connected with it by a short pedicle near the middle of the under side, project from it almost at right angles; they are somewhat pyriform, and terminate in a slightly curved, obtuse process, having a protuberance on its outer side, and are of a pale-reddish colour. The cephalo-thorax is oval and moderately convex, with a slight indentation in the medial line; the falces are long, prominent, conical, and fringed with hairs on the inner surface; the maxillæ are greatly enlarged where the palpi are inserted, pointed at the extremity, and supplied with hairs on the inner surface; the lip is hollowed at the apex, and has a transverse furrow at its base; and the sternum is oval. These parts are of a dark-red colour. The two anterior eyes, which are almost contiguous to the frontal margin of the cephalo-thorax, are the largest of the six. The abdomen is oviform, convex above, and projects a little over the base of the cephalo-thorax; it is sparingly clothed with short hairs, and has a yellowish-brown hue.

An adult male of this species was comprised in a collection of British spiders received from Charles C. Babington, Esq., M.A., in 1840. M. Walckenaer is certainly mistaken in supposing that *Dysdera rubicunda* is merely a variety of *Dysdera erythrina* ('Hist. Nat. des Insect. Apt.,' t. ii, p. 444), as well-marked differences in the structure of the palpal organs of the males prove to demonstration that they are distinct.

DYSDERA HOMBERGII. Pl. XXVIII, fig. 268.

Dysdera Hombergii, Walck., Hist. Nat. des Insect. Apt., tom. i, p. 263.

— — Blackw., Linn. Trans., vol. xix, p. 129.

— — Koch, Die Arachn., Band x, p. 95, tab. 351, figs. 819, 820.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 250.

— *Latreillii*, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. i, p. 190.

— *gracilis*, Wider, Museum Senckenb., Band i, p. 200, taf. 14, fig. 1.

— *punctata*, Koch, Die Arachn., Band v, p. 84, tab. 167, figs. 395, 396.

Length of the female, $\frac{11}{32}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{12}$ th, breadth, $\frac{1}{17}$ th; breadth of the abdomen, $\frac{1}{12}$ th; length of an anterior leg, $\frac{1}{4}$ th; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs are long, slender, and of a yellowish-brown colour, with broad, dark-brown annuli; the first pair is rather the longest, then the fourth, and the third pair is much the shortest; the tarsi are destitute of scopulæ, and are terminated by three claws; the two superior ones are curved and deeply pectinated, and the inferior one, which is minute, is inflected near its base. The palpi have a small curved claw at their extremity, and are of a uniform light red-brown hue. The cephalo-thorax is oval, convex, glossy, with a very slight indentation in the medial line, and is of a brownish-black colour. The falces are strong, conical, slightly prominent, and armed with a few small teeth on the inner surface; the maxillæ are long, very convex at the base, enlarged where the palpi are inserted, and somewhat pointed at the extremity; the lip is truncated at the apex; and the sternum is oval, with small eminences on the sides, opposite to the legs. These parts have a very dark-brown hue, the falces being the darkest, and the maxillæ and lip the palest. The two anterior eyes are the largest of the six. The abdomen is of an elongated oviform figure, inclining to cylindrical, and projects very little over the base of the cephalo-thorax; it is thinly clothed with hairs, and the colour of the upper part is dark-brown, or pale-brown mottled with numerous dark-brown spots; the under part has a yellowish-brown hue, a narrow brown band extending along the middle; and the colour of the branchial and tracheal opercula is pale-yellow. Some individuals have the under part of the abdomen tinged with pink; its extremities in others are of a yellowish-white hue; and the young in general are lighter coloured than adults.

The sexes are similar in colour, but the abdomen is slenderer and more nearly cylindrical, the falces are more prominent, and the maxillæ are rather more pointed at the extremity in the male than in the female. The cubital joint of the palpi is shorter than the radial, and the digital joint is small, oval, and protuberant underneath, near its articulation with the radial joint, from which protuberance the palpal organs project upwards; they are pyriform, glossy, with two small, curved, black spines near their extremity, which is abruptly contracted, and are of a yellowish-brown colour.

Distinguished arachnologists have mistaken *Dysdera Hombergii*, first briefly described by Scopoli ('Entomologia Carniolica,' p. 403, No. 1119), for the young of *Dysdera erythrina*, from which it differs in colour and organization. A conviction of its specific distinctness having been induced by a careful examination of specimens captured in 1832, in the same year a description of it was given in the 'London and Edinburgh Philosophical Magazine,' under the appellation of *Dysdera Latreillii*; but the trivial name, of course, is superseded by that originally conferred upon it by Scopoli. The tarsi of this species, it will be perceived, unlike those of its congeners, have three claws at their extremity, and are destitute of scopulæ.

Crevices in rocks and walls, and the under side of lichens growing on trees, are the favorite resorts of *Dysdera Hombergii*, which is plentiful in the wooded districts of Denbighshire, Caernarvonshire, Lancashire and Yorkshire; and in the spring of 1849 an immature female was

received from Mr. J. Hardy, who took it in Berwickshire, and has since found adult specimens in the same county. The sexes pair in May, and in the succeeding month the female envelopes herself in an oval cell of white silk of a slight texture, on whose exterior surface are disposed minute pebbles, small pieces of indurated soil and other heterogeneous materials; in this cell she deposits between twenty and thirty spherical eggs of a pale-pink colour, which are not cemented together.

Mr. R. Templeton remarks that this species is very common at Cranmore, in Ireland.

Genus—SEGESTRIA, Latr.

Eyes disposed on the anterior part of the cephalo-thorax; four placed rather near together form a transverse row, and behind each lateral eye another is situated.

Maxillæ long, straight, dilated at the base where the palpi are inserted, and rounded at the extremity on the outer side.

Lip of an oblong quadrilateral figure, slightly hollowed at the extremity.

Legs moderately long and robust; the first pair is the longest, then the second, the third pair being the shortest in females.

SEGESTRIA PERFIDA. Pl. XXVIII, fig. 269.

Segestria perfida, Walck., Hist. Nat. des Insect. Apt., tom. i, p. 267.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 251.

— *florentina*, Hahn, Die Arachn., Band i, p. 5, tab. 1, fig. 1.

— — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 20.

— — Koch, Die Arachn., Band v, p. 72, tab. 164, figs. 385, 386.

— *cellaria*, Latr., Gen. Crust. et Insect., tom. i, p. 88.

Length of the female, $\frac{3}{4}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{3}$ rd, breadth, $\frac{3}{10}$ ths; breadth of the abdomen, $\frac{1}{4}$ th; length of an anterior leg, $\frac{7}{8}$ ths; length of a leg of the third pair, $\frac{3}{4}$ ths.

The intermediate eyes of the anterior row are very near together, and those of each lateral pair are seated on a small tubercle. The cephalo-thorax is large, convex, and marked with furrows on the sides, converging towards a very slight indentation in the medial line; it is of a reddish-brown colour, the region of the eyes and the lateral margins being much the darkest, and is clothed with hoary hairs. The falces are powerful, conical, prominent, provided with long hairs in front, armed with teeth on the inner surface, and of a bright, glossy-green colour. The maxillæ are gibbous at the base; the lip is hollowed at the extremity; and the sternum is of an elongated oval form, with eminences on the sides, opposite to the legs. These parts have a red-brown hue, the bases of the maxillæ and lip being the darkest. The

legs are robust, provided with hairs and sessile spines, and are of a very dark reddish-brown colour, the metatarsi and tarsi being the palest; each tarsus is terminated by three claws; the two superior ones are curved and deeply pectinated, and the inferior one is inflected near its base. The palpi are short, and resemble the legs in colour. The abdomen is hairy, somewhat cylindrical, rather larger at the posterior than at the anterior extremity, and projects a little over the base of the cephalo-thorax; it has a dark-brown hue, with an obscure, dentated, blackish band in the medial line of the upper part; the middle of the under part has a reddish-brown tint, and is bordered laterally by a fine, yellowish-white line; each of these lines unites at the spinners with the extremity of a fine line of the same hue extending obliquely along the side; the colour of the branchial opercula is yellow, and that of the tracheal opercula yellowish-brown.

The sides and under part of the abdomen are lighter coloured, and the blackish, dentated, longitudinal band occupying the middle of its upper part is more conspicuous in the male than the female. The relative length of the legs also is different in the sexes, the male having the third pair longer than the fourth. The radial joint of its palpi is larger than the cubital; the digital joint is long, slender, and cylindrical, except at the base, where it is dilated, and from the under side of this enlargement the palpal organs project at right angles; they are pyriform, tapering to the extremity, which is slightly curved, and are of a red-brown colour.

The claim of this fine species to a place among our indigenous spiders rests on the authority of Dr. Leach, who has recorded an instance of its capture at Plymouth, in the Supplement to the fourth, fifth, and sixth editions of the 'Encyclopædia Britannica,' article Annulosa.

SEGESTRIA SENOCULATA. Pl. XXVIII, fig. 270.

Segestria senoculata, Walck., Hist. Nat. des Insect. Apt., tom. i, p. 268.

— — Latr., Gen. Crust. et Insect., tom. i, p. 89.

— — Sund., Vet. Acad. Handl., 1831, p. 145.

— — Hahn, Die Arachn., Band i, p. 6, tab. 1, fig. 2.

— — Koch, Uebers. des Arachn. Syst., erstes Heft, p. 21.

— — Koch, Die Arachn., Band v, p. 75, tab. 164, fig. 388.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 251.

Titulus 24, Lister, Hist. Animal. Angl., De Aran., p. 74, tab. 1, fig. 24.

Length of the female, $\frac{2}{3}$ ths of an inch; length of the cephalo-thorax, $\frac{1}{8}$ th, breadth, $\frac{1}{10}$ th; breadth of the abdomen, $\frac{1}{8}$ th; length of an anterior leg, $\frac{2}{3}$ ths; length of a leg of the third pair, $\frac{1}{3}$ rd.

The disposition of the eyes in this species is precisely the same as in *Segestria perfida*. The cephalo-thorax is long, somewhat quadrilateral, convex, glossy, sparingly clothed with hairs, without an indentation in the medial line, and of a dark-brown colour. The falces are

strong, conical, prominent, glossy, provided with long hairs in front, armed with teeth on the inner surface, and of a brownish-black hue. The colour of the maxillæ and lip is dark-brown, with the exception of their extremities, which have a red-brown tint. The sternum is of an elongated oval form, with small eminences on the sides, opposite to the legs, and has a pale-brown hue. The legs are abundantly provided with hairs, and have sessile spines on the inferior surface of tibiæ and metatarsi; they are of a yellowish-brown colour, with brownish-black annuli, the tibiæ, metatarsi and tarsi of the first pair, and the metatarsi and tarsi of the second pair having a strong tinge of red; each tarsus is terminated by three claws; the two superior ones are curved and deeply pectinated, and the inferior one is inflected near its base. The palpi resemble the legs in colour, but are without annuli; the radial and digital joints have a reddish-brown tint, and the latter has a small, curved claw at its extremity. The abdomen is nearly cylindrical, thinly clothed with hairs, glossy, and projects a little over the base of the cephalo-thorax; it is of a dull yellowish-brown colour, with a series of contiguous, brownish-black, rhomboidal marks, extending along the medial line of the upper part, and numerous minute spots of the same hue on the sides and under part; the spinners are situated a little below the posterior extremity of the abdomen, and, with the branchial and tracheal opercula, have a yellowish-white tint.

The sexes are similar in colour, but the male is the smaller, and its legs differ from those of the female in their relative length, the third pair being rather longer than the fourth. In the structure of the palpi and palpal organs it resembles the male of *Segestria perfida*, and the colour of the latter is pale red-brown, with a spiral band of a darker hue.

Segestria senoculata is of frequent occurrence in many parts of England, Wales, and Ireland, and in December, 1848, a young individual was received from Mr. J. Hardy, who captured it in Berwickshire. It spins a long tube, which serves for a domicile, in the crevices of rocks and walls, and under lichens growing on trees. Towards the end of May or the beginning of June the female deposits between eighty and ninety spherical eggs of a yellowish-white colour, not agglutinated together, in a lenticular cocoon of white silk of a fine but compact texture, measuring $\frac{1}{4}$ th of an inch in diameter, which is inclosed in a silken cell, attached to objects near her retreat, and covered with particles of earth and the refuse of her prey.

This species, when in captivity, does not complete its several changes of integument and arrive at maturity in less than two years, and the term of its existence has been ascertained to extend through a period of four years. Only three spinning tubes are connected with each intermediate spinner of this spider; they are situated at its extremity and are of large dimensions.

Genus SCHÆNOBATES, Blackw.

Eyes seated on the anterior part of the cephalo-thorax; four, situated near the frontal margin, describe a transverse, curved row whose convexity is directed backwards, and behind each lateral eye another is placed.

Maxillæ very powerful, short, broad, gibbous near the base, somewhat enlarged and rounded at the extremity, and slightly inclined towards the lip.

Lip large, triangular.

Legs moderately long and robust; the anterior and posterior pairs, which are the longest, are equal in length, and the third pair is the shortest.

SCHÆNOBATES WALKERI.

Schænobates Walkeri, Blackw., Annals and Mag. of Nat. Hist., second series, vol. vi, p. 343; and vol. x, p. 252.

Length of the male, $\frac{1}{8}$ th of an inch; length of the cephalo-thorax, $\frac{1}{16}$ th, breadth, $\frac{1}{10}$ th; breadth of the abdomen, $\frac{1}{10}$ th; length of an anterior leg, $\frac{3}{16}$ ths; length of a leg of the third pair, $\frac{1}{8}$ th.

The legs are moderately robust, provided with hairs and a few spines, and are of a yellowish-brown colour, with the exception of the femora of the first and second pairs, which have a dark-brown hue; each tarsus is terminated by two small, curved claws. The cephalo-thorax is oval, convex, of a red-brown colour, the margins being somewhat darker, and has several rows of white, iridescent, scale-like hairs on the sides, which converge towards an indentation in the medial line. The falcæ are subconical and without teeth on the inner surface; and the sternum is heart-shaped. These parts, with the maxillæ and lip, are of a red-brown colour. The humeral joint of the palpi has a dark-brown hue, that of the cubital joint being yellowish-brown, and the radial joint, which projects a small, pointed apophysis from its extremity, in front, has a reddish-brown tint; the digital joint is oval, convex and hairy externally, concave within, comprising the palpal organs; they are highly developed, prominent, not very complicated in structure, and of a reddish-brown colour. The abdomen is oviform, convex above, projecting over the base of the cephalo-thorax; its colour is dark-brown mingled with yellowish-brown; white, iridescent, scale-like hairs are distributed over its surface, and a spot composed of dense, white hairs occurs immediately above the spinners.

An adult male of this very interesting spider was captured at Broadstairs, in Kent, in the month of September, and is in Mr. F. Walker's cabinet. It is preserved in Canada balsam, and has suffered from compression, circumstances which render an investigation of its structure difficult. On a most careful inspection of it under the microscope, only six eyes could be perceived; but even should it ultimately be found to possess eight of those organs, it must still, by its other essential characters, constitute a new genus.

Genus OONOPS, Templeton.

Eyes aggregated in pairs on the anterior part of the cephalo-thorax; two pairs are placed laterally, and the third pair is intermediate, the eyes which constitute it being oval and contiguous; the entire group forms two triangles united by their vertices composed of the oval-shaped eyes.

Maxillæ dilated at the base where the palpi are inserted, slightly so at the extremity, and inclined towards the lip.

Lip short, triangular.

Legs long and moderately robust; the fourth pair is the longest, then the first, and the third pair is the shortest.

OONOPS PULCHER. Pl. XXIX, fig. 271.

Oonops pulcher, Templeton, Zoological Journal, vol. v, p. 404, pl. 17, fig. 10.

— — Blackw., Linn. Trans., vol. xix, p. 129.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 252.

Deletrix exilis, Blackw., Lond. and Edinb. Phil. Mag., third series, vol. x, p. 100.

Dysdera pulchra, Walck., Hist. Nat. des Insect. Apt., t. iv, p. 382.

Length of the female, $\frac{1}{13}$ th of an inch; length of the cephalo-thorax, $\frac{1}{25}$ th, breadth, $\frac{1}{30}$ th; breadth of the abdomen, $\frac{1}{30}$ th; length of a posterior leg, $\frac{1}{8}$ th; length of a leg of the third pair, $\frac{1}{12}$ th.

The cephalo-thorax is oval, glossy, very convex, pointed before, and abruptly sloping behind, with projecting hairs about the region of the eyes; the falces are slender, conical, and vertical; the sternum is broad, heart-shaped, convex, with small prominences on the sides, opposite to the legs, and some hairs sparingly distributed over its surface; the legs are provided with hairs, and with two longitudinal rows of sessile spines on the inferior surface of the tibiæ and metatarsi, those on the first and second pairs being the most conspicuous; each tarsus is terminated by two curved, pectinated claws, below which there is a small scopula; and the palpi are abundantly supplied with long hairs, particularly at their extremity. These parts, with the maxillæ and lip, have a yellowish-brown tint. The abdomen is oviform, thinly clothed with hairs, and projects over the base of the cephalo-thorax; it is of a full, bright, orange-red colour, which is speedily extracted by spirit of wine; and the branchial opercula and spinners have a yellowish-white hue. Young individuals are frequently of a pale-red colour, and sometimes have an obscure band extending along each side of the medial line, on the upper part of the abdomen, several irregular, oblique streaks on the sides, and a longitudinal band occupying the middle of the under part of a dull-brown hue.

The male bears a general resemblance to the female, but the anterior margin of its cephalothorax is more prominent, and its maxillæ have an oblique, transverse depression near the middle. The radial joint of its palpi is rather larger than the cubital; the digital joint is small, oval, convex and hairy externally, and slightly concave underneath, whence the palpal organs project at right angles; they are highly developed, somewhat pyriform, greatly dilated at the base, filiform at the extremity, which is slightly curved, and are of a pale reddish-brown colour.

In the 'London and Edinburgh Philosophical Magazine,' the genus *Deletria* has been proposed for the reception of this minute spider, which is there described, under the specific name *exilis*, from immature females whose colours had been injured by captivity. At that time it was not known that the genus *Oonops*, founded by Mr. Templeton on the organic peculiarities of this species, had the claim of priority.

M. Walckenaer does not admit the validity of the well-defined genus *Oonops* (misprinted *Conops*), but has placed this spider in the genus *Dysdera*. See the synonyma.

Oonops pulcher occupies interstices in rocks and walls, and among lichens growing on trees, in Lancashire, Denbighshire, and Caernarvonshire, being abundant in the wooded parts of the last two counties. By the agency of the small scopula, connected with the extremity of each tarsus, it is enabled to move with celerity and security on dry objects having polished perpendicular surfaces. In May the female fabricates near her retreat several contiguous, subglobose cocoons of white silk of a delicate but compact texture, measuring about $\frac{1}{16}$ th of an inch in diameter, in each of which she usually deposits two spherical, pink eggs, not cemented together.

Mr. R. Templeton states that this species is extremely common at Cranmore, and by no means rare in Kent; and Mr. J. Hardy has taken specimens of both sexes in Berwickshire.

SCYTODIDÆ. Pl. XIX, fig. 372.

— *Scytodes* *Walek*, *Hist. Nat. des Insect. Apt.*, t. i, p. 370.
 — *Latr.*, *Gen. Crust. et Insect.*, tom. i, p. 93.
 — *Blackw.*, *Annals and Mag. of Nat. Hist.*, second series, vol. x,
 p. 333.
 — *Reich.*, *Die Arachn.*, Band v, p. 87, tab. 167, fig. 398.

Family SCYTODIDÆ.

Among the spiders of this family much difference may be observed in the absolute and relative length of their legs, which are terminated by two or three tarsal claws. The falcæ are articulated either on an inclined plane or vertically, and the abdomen is provided with three pairs of spinners and two branchial opercula.

The *Scytodidæ* inhabit countries having warm and temperate climates, situated in various parts of the globe. Caves, the inside of buildings, herbage, and the under side of stones are their customary haunts, and in them they spin a few fine lines connected together without any apparent regularity.

Genus SCYTODES, Latr.

Eyes distributed in pairs on the anterior part of the cephalo-thorax; each lateral pair is placed obliquely, and the third pair, situated in advance, forms a transverse line in front.

Maxillæ slender, pointed, enlarged at the base where the palpi are inserted, and greatly inclined towards the lip.

Lip somewhat triangular, having its extremity rounded or truncated.

Legs long and slender; the first pair is the longest and the third pair is the shortest.

SCYTODES THORACICA. Pl. XXIX, fig. 272.

Scytodes thoracica, Walck., Hist. Nat. des Insect. Apt., t. i, p. 270.

— — Latr., Gen. Crust. et Insect., tom. i, p. 99.

— — Blackw., Annals and Mag. of Nat. Hist., second series, vol. x, p. 253.

— *tigrina*, Koch, Die Arachn., Band v, p. 87, tab. 167, fig. 398.

Length of the female, $\frac{1}{4}$ th of an inch; length of the cephalo-thorax, $\frac{1}{8}$ th, breadth, $\frac{1}{10}$ th; breadth of the abdomen, $\frac{1}{9}$ th; length of an anterior leg, $\frac{9}{50}$ ths; length of a leg of the third pair, $\frac{3}{10}$ ths.

The legs are of a brownish-yellow colour, with black annuli; the first pair is the longest, then the fourth, and the third pair is the shortest; each tarsus is terminated by a short supplementary joint, into which two curved, pectinated claws are inserted. The short palpi resemble the legs in colour, and their digital joint is slender and pointed. The cephalo-thorax is large, oval, and remarkably convex, particularly in the posterior region, which is without an indentation in the medial line; it is of a brownish-yellow colour, having a very irregular black line, extending from a prominence on each side of the frontal margin to the posterior gibbosity, irregular black marks on the sides and lateral margins, and a small black spot on which the anterior pair of eyes is seated. The falces are feeble, conical, prominent, armed with a very minute fang at the extremity, and of a brownish-yellow hue, with a black spot in front. The lip is short and rounded at the extremity; and the sternum is oval, with small prominences on the sides, opposite to the legs. These parts, with the maxillæ, have a yellowish tint; several small black spots occur on the lateral margins and one in the middle of the sternum, and there is a spot of the same hue on the outside of the enlarged base of the maxillæ, where the palpi are inserted. The abdomen is subglobose, slightly hairy, and of a pale, dull, yellow hue spotted with black; on the upper part the larger spots are arranged in a longitudinal row on each side of the medial line, and those near the anterior extremity are confluent, forming one or more transverse lines; the spots on the under part are small and few in number; the colour of the branchial opercula is yellow, and that of the very minute sexual organs red-brown.

The male of *Scytodes thoracica* has not yet been discovered. The female inhabits the interior of houses, is slow in its movements, and carries its cocoon under the sternum, in which situation it is retained by the instrumentality of the falces and palpi.

Dr. Leach has stated in the supplement to the 4th, 5th, and 6th editions of the 'Encyclopædia Britannica,' article "Annulosa," that two females of this species have been taken near Dover.

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DESCRIPTION OF PLATE XIII.

FIG.

111. *Theridion lineatum*. *a*, ♀; *b*, ♂; *c* and *d*, ♀, varieties; *e*, ♂, variety; *f*, ♀, showing position when suspended; *g*, cephalo-thorax and abdomen of ♀, in profile; *h*, position of eyes on ceph.; *i*, maxillæ, labium and sternum; *k*, falces of ♂; *l*, cocoon *in situ* on leaf; the two figures without letters are the palpus of the ♂, and the falces of the ♀.
112. „ *quadripunctatum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
113. „ *Sisyphum*. *a*, ♀; *b*, ♀, variety; *c*, ♀, variety; *d*, ♂; *e*, cocoons, of the natural size.
114. „ *tepidariorum*. *a*, ♀; *b*, ♂; *c*, *d*, palpus of ♂, in different positions; *e*, cocoons of the natural size.
115. „ *riparium*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
116. „ *nervosum*. *a*, ♀; *b*, ♀, variety; *c*, ♂; *d*, palpus of ♂; *e*, cocoon *in situ* on leaf.
117. „ *pictum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, cocoons of the natural size *in situ*.
118. „ *denticulatum*. *a*, ♀; *b*, ♂; *c*, ♀, variety; *d*, ♂, variety; *e*, palpus of ♂.



Thullen West, sc. ad nat.

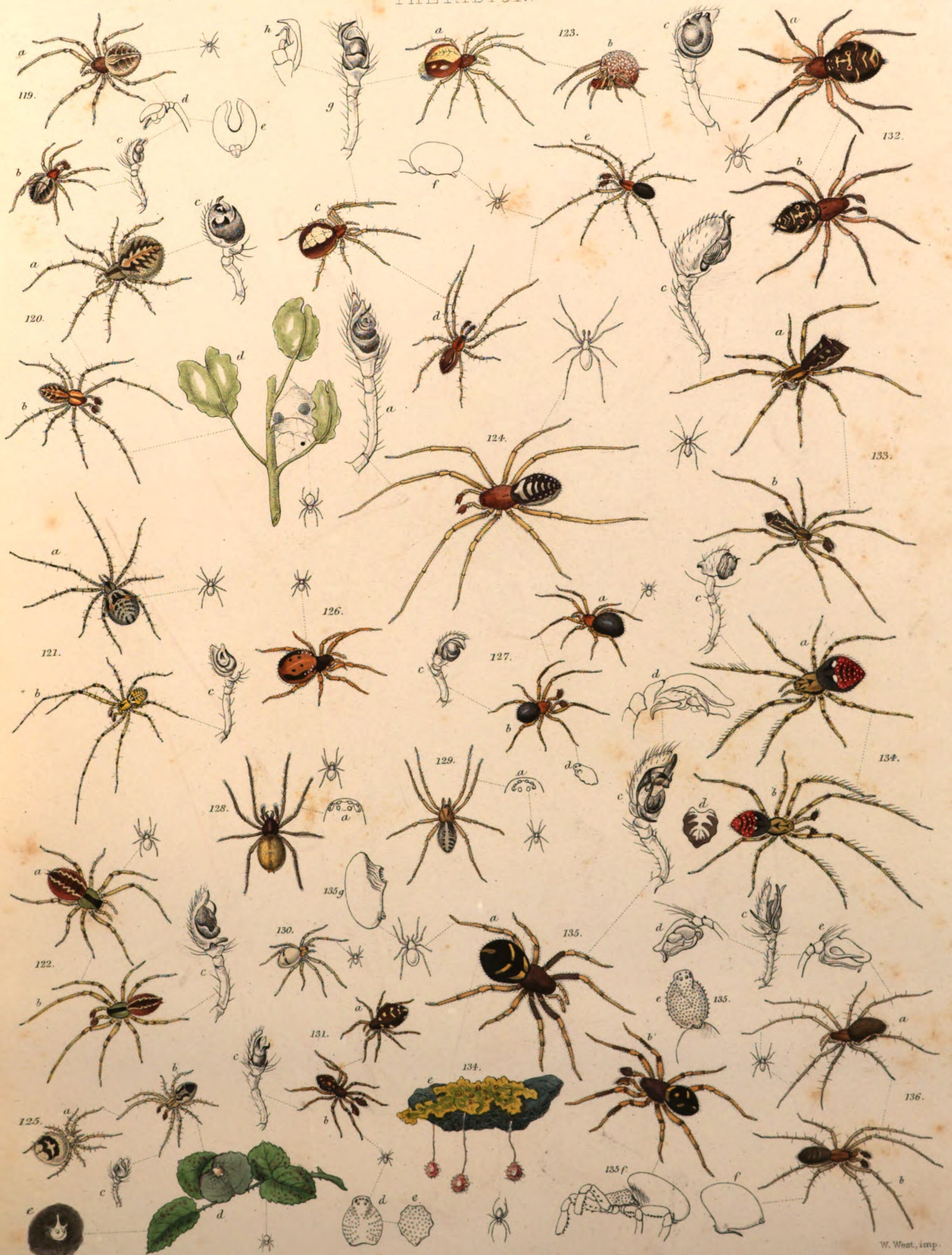
111. *T. lineatum*, ♀, ♂. 112. *T. quadripunctatum*, ♀, ♂. 113. *T. Sisyphum*, ♀, ♂ juv. 114. *T. tepidariorum*, ♀, ♂.
115. *T. riparium*, ♀, ♂. 116. *T. nervosum*, ♀, ♂. 117. *T. pictum*, ♀, ♂. 118. *T. denticulatum*, ♀, ♂.

W. West, imp.

DESCRIPTION OF PLATE XIV.

FIG.

119. *Theridion simile*. *a*, ♀; *b*, ♂; *c* and *d*, palpus of ♂, in two positions; *e*, abdomen of ♀, under side.
120. „ *varians*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, cocoons of natural size *in situ*.
121. „ *tinctum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
122. „ *pulchellum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
123. „ *Carolinum*. *a*, ♀, with cocoon; *b*, ♀, and *c*, ♀, varieties; *d*, ♂; *e*, ♂, a dark variety; *f*, abdomen of ♀, in profile; *g* and *h*, palpus of ♂, in different positions.
124. „ *versutum*, ♂; *a*, palpus of ♂.
125. „ *pallens*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, cocoon of natural size *in situ*; *e*, cocoon slightly magnified.
126. „ *stictum*, ♀.
127. „ *inornatum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, cephalo-thorax, in profile.
128. „ *auratum*, ♀; *a*, eyes.
129. „ *hæmatostigma*, ♀; *a*, eyes.
130. „ *albens*, ♀.
131. „ *guttatum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, cephalo-thorax, from above; *e*, sternum.
132. „ *flavo-maculatum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
133. „ *angulatum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
134. „ *variegatum*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, sternum; *e*, cocoons of natural size.
135. „ *signatum*. *a*, ♀; *b*, ♂; *c* and *d*, palpus of ♂, in different positions; *e*, cephalo-thorax, from above; *f*, profile of spider, to show spines on legs and cephalo-thorax; *g*, abdomen, in profile.
136. „ *filipes*. *a*, ♀; *b*, ♂; *c*, *d*, *e*, palpus of ♂, in different positions; *f*, abdomen of ♀, in profile.



R. Templeton & T.W. del. Tiffen West. sc.

W. West, imp.

119. *T. simile*, ♀, ♂. 120. *T. varians*, ♀, ♂. 121. *T. tinctum*, ♀, ♂. 122. *T. pulchellum*, ♀, ♂. 123. *T. Carolinum*, ♀, ♂.
 124. *T. versutum*, ♂. 125. *T. pallens*, ♀, ♂. 126. *T. stictum*, ♀. 127. *T. inornatum*, ♀, ♂. 128. *T. auratum*, ♀.
 129. *T. hæmatostigma*, ♀. 130. *T. albens*, ♀. 131. *T. guttatum*, ♀, ♂. 132. *T. flavo-maculatum*, ♀, ♂.
 133. *T. angulatum*, ♀, ♂. 134. *T. variegatum*, ♀, ♂. 135. *T. signatum*, ♀, ♂. 136. *T. filipes*, ♀, ♂.

DESCRIPTION OF PLATE XV.

FIG.

137. *Pholcus phalangioides*. *a*, ♀, with cocoon; *b*, ♀; *c*, eyes; *d*, palpus of ♂; *f*, maxillæ and labium.
138. *Linyphia montana*. *a*, ♀; *b*, ♂; *c*, eyes; *d*, maxillæ and labium; *e*, falx of ♂; *f*, palpus of ♂.
139. „ *triangularis*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
140. „ *marginata*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
141. „ *pratensis*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
142. „ *fuliginea*. *a*, ♀; *b*, ♀, variety; *c*, ♂; *d*, palpus of ♂.
143. „ *rubea*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
144. „ *minuta*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
145. „ *cauta*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.



Tafel West, sc. ad nat.

W. West, imp.

137. *P. phalangioides*. 138. *L. montana*. 139. *L. triangularis*. 140. *L. marginata*.
141. *L. pratensis*. 142. *L. fuliginea*. 143. *L. rubrea*. 144. *L. minuta*. 145. *L. cauta*.

DESCRIPTION OF PLATE XVI

150	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
151	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
152	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
153	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
154	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
155	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
156	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
157	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
158	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
159	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
160	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
161	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
162	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
163	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
164	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
165	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
166	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
167	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
168	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
169	Amphipoda communis. a: 7; b: 5; c: palpus of 5.
170	Amphipoda communis. a: 7; b: 5; c: palpus of 5.

DESCRIPTION OF PLATE XVI.

FIG.

146. *Linyphia vivax*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
147. „ *socialis*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
148. „ *crypticolens*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
149. „ *alticeps*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, cephalo-thorax, in profile.
150. „ *longidens*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, abdomen of ♀, in profile.
151. „ *frenata*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, abdomen of ♀, in profile.
152. „ *tenuis*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
153. „ *terricola*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
154. „ *Meadii*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
155. „ *Claytoniæ*. *a*, ♀; *b*, ♂; *c* and *d*, ♀, varieties; *e*, palpus of ♂.
156. „ *pulla*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.



Tuffen. West. sc. et del.

146. *L. vivax*. 147. *L. socialis*. 148. *L. crypticolenis*. 149. *L. alticeps*.
 150. *L. longidens*. 151. *L. frenata*. 152. *L. tenuis*. 153. *L. terricola*. 154. *L. Meadii*.
 155. *L. Claytoniae*. 156. *L. pulla*.

W. West. imp.

DESCRIPTION OF PLATE XVI

157	<i>Linyphia nana</i>	♂: 2; ♀: 3; palpus of 2; 3; variety.
158	"	"
159	"	♂: 1; ♀: 2; palpus of 2
160	"	♂: 2; ♀: 3; palpus of 2; 3; cephalo-thorax and abdomen in profile.
161	"	albida ?
162	"	obscura, ♂: 2; ♀: 3; palpus of 2
163	"	gracilis, ♂: 2; ♀: 3; palpus of 2
164	"	tenella ?
165	"	circumpecta, ♂: 2; ♀: 3; palpus of 2
166	"	parva, ♂: 2; ♀: 3; palpus of 2
167	<i>Merisus marginatus</i>	♂: 2; ♀: 3; palpus of 2
168	"	blacki, ♂: 2; ♀: 3; palpus of 2

DESCRIPTION OF PLATE XVII.

FIG.

157. *Linyphia alacris*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, ♀, variety.
158. „ *nasata*. ♀.
159. „ *ericæa*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
160. „ *insignis*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, cephalo-thorax and abdomen in profile.
161. „ *albula*. ♀.
162. „ *obscura*. *a*, ♂; *b*, palpus of ♂.
163. „ *gracilis*. *a*, ♂; *b*, palpus of ♂.
164. „ *tenella*. ♀.
165. „ *circumspecta*. *a*, ♂; *b*, palpus of ♂.
166. „ *flavipes*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
167. *Nerience marginata*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
168. „ *bicolor*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.



Tuffen West, del.

157. *L. alacris*, ♀♂. 158. *L. nasata*, ♀. 159. *L. ericæa*, ♀♂. 160. *L. insignis*, ♀♂. 161. *L. albula*, ♀.
 162. *L. obscura*, ♂. 163. *L. gracilis*, ♂. 164. *L. tenella*, ♀. 165. *L. circumspicata*, ♂. 166. *L. flavipes*, ♀♂.
 167. *N. marginata*, ♀♂. 168. *N. bicolor*, ♀♂.

W. West, lith.

DESCRIPTION OF PLATE XVIII.

160	Anterior view of cephalo-thorax and labrum.	Fig. 1.
161	Anterior view of cephalo-thorax and labrum.	Fig. 2.
162	Anterior view of cephalo-thorax and labrum.	Fig. 3.
163	Anterior view of cephalo-thorax and labrum.	Fig. 4.
164	Anterior view of cephalo-thorax and labrum.	Fig. 5.
165	Anterior view of cephalo-thorax and labrum.	Fig. 6.
166	Anterior view of cephalo-thorax and labrum.	Fig. 7.
167	Anterior view of cephalo-thorax and labrum.	Fig. 8.
168	Anterior view of cephalo-thorax and labrum.	Fig. 9.
169	Anterior view of cephalo-thorax and labrum.	Fig. 10.
170	Anterior view of cephalo-thorax and labrum.	Fig. 11.
171	Anterior view of cephalo-thorax and labrum.	Fig. 12.
172	Anterior view of cephalo-thorax and labrum.	Fig. 13.
173	Anterior view of cephalo-thorax and labrum.	Fig. 14.
174	Anterior view of cephalo-thorax and labrum.	Fig. 15.
175	Anterior view of cephalo-thorax and labrum.	Fig. 16.
176	Anterior view of cephalo-thorax and labrum.	Fig. 17.
177	Anterior view of cephalo-thorax and labrum.	Fig. 18.
178	Anterior view of cephalo-thorax and labrum.	Fig. 19.
179	Anterior view of cephalo-thorax and labrum.	Fig. 20.
180	Anterior view of cephalo-thorax and labrum.	Fig. 21.
181	Anterior view of cephalo-thorax and labrum.	Fig. 22.
182	Anterior view of cephalo-thorax and labrum.	Fig. 23.
183	Anterior view of cephalo-thorax and labrum.	Fig. 24.
184	Anterior view of cephalo-thorax and labrum.	Fig. 25.
185	Anterior view of cephalo-thorax and labrum.	Fig. 26.
186	Anterior view of cephalo-thorax and labrum.	Fig. 27.
187	Anterior view of cephalo-thorax and labrum.	Fig. 28.
188	Anterior view of cephalo-thorax and labrum.	Fig. 29.
189	Anterior view of cephalo-thorax and labrum.	Fig. 30.
190	Anterior view of cephalo-thorax and labrum.	Fig. 31.
191	Anterior view of cephalo-thorax and labrum.	Fig. 32.
192	Anterior view of cephalo-thorax and labrum.	Fig. 33.
193	Anterior view of cephalo-thorax and labrum.	Fig. 34.
194	Anterior view of cephalo-thorax and labrum.	Fig. 35.
195	Anterior view of cephalo-thorax and labrum.	Fig. 36.
196	Anterior view of cephalo-thorax and labrum.	Fig. 37.
197	Anterior view of cephalo-thorax and labrum.	Fig. 38.
198	Anterior view of cephalo-thorax and labrum.	Fig. 39.
199	Anterior view of cephalo-thorax and labrum.	Fig. 40.
200	Anterior view of cephalo-thorax and labrum.	Fig. 41.

DESCRIPTION OF PLATE XVIII.

FIG.

169. *Nerienne livida*. *a*, palpus of ♂; *b*, ♂; *c*, ♀.
170. „ *errans*. *a*, palpus of ♂; *b*, ♂; *c*, ♀.
171. „ *viaria*. *a*, palpus of ♂; *b*, ♂.
172. „ *gracilis*. *a*, palpus of ♂; *b*, ♀; *c*, ♂.
173. „ *vagans*. *a* and *b*, palpus of ♂ in two positions; *c*, ♂; *d*, ♀.
174. „ *dentata*. *a*, palpus of ♂; *b*, front view of cephalo-thorax and falces; *c*, ♂.
175. „ *affinis*. *a*, ♂; *b*, ♀; *c*, front view of cephalo-thorax and falces; *d*, palpus of ♂.
176. „ *Huthwaitii*. *a*, ♂; *b*, palpus of ♂.
177. „ *pygmæa*. *a*, ♂; *b*, ♀; *c*, palpus of ♂.
178. „ *flavipes*. *a*, ♂; *b*, ♀; *c*, palpus of ♂.
179. „ *parva*. *a*, ♂; *b*, palpus of ♂.
180. „ *munda*. *a*, ♀; *b*, ♂; *c* and *d*, palpus of ♂ in two positions.
181. „ *cornuta*. *a*, ♂; *b*, ♀; *c*, side view of cephalo-thorax and falces; *d*, *e*, palpus of ♂ in two positions.
182. „ *bituberculata*. *a*, ♂; *b*, ♀; *c*, palpus of ♂; *d*, side view of cephalo-thorax and falces; *e*, front view of cephalo-thorax and falces.
183. „ *apicata*. *a*, ♂; *b*, cephalo-thorax in profile; *c*, palpus of ♂.
184. „ *rubens*. *a*, ♀; *b*, ♂; *c*, one of first pair of legs of ♂; *d*, *e*, palpus of ♂, in two positions.
185. „ *nigra*. *a*, ♂; *b*, ♀; *c*, *d*, palpus of ♂ in two positions; *e*, cephalo-thorax in profile.
- A. „ *marginata*. Front view of cephalo-thorax and falces; and falces, maxillæ, and labium.



169. *N. livida*, ♀. 170. *N. errans*, ♀. 171. *N. viaria*, ♂. 172. *N. gracilis*, ♀. 173. *N. vagans*, ♀. 174. *N. dentata*, ♂.
 175. *N. affinis*, ♀. 176. *N. Huthwaitii*, ♂. 177. *N. pygmaea*, ♀. 178. *N. flavipes*, ♀. 179. *N. parva*, ♂. 180. *N. munda*, ♀.
 181. *N. cornuta*, ♀. 182. *N. bituberculata*, ♀. 183. *N. apicata*, ♂. 184. *N. rubens*, ♀. 185. *N. nigra*, ♀.
 A *N. marginata*. (see fig. 167, Pl. XVII.)

DESCRIPTION OF PLATE XII

182	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
183	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
184	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
185	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
186	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
187	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
188	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
189	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
190	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
191	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
192	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
193	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
194	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
195	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
196	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
197	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
198	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
199	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
200	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
201	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.
202	<i>Stylopsis</i>	a, side view of cephalo-thorax and legs; b, cephalo-thorax and legs in two positions.

* See also Plate XVII.

DESCRIPTION OF PLATE XIX.

FIG.

186. *Neriere graminicola*. *a*, side view of cephalo-thorax and falces; *b*, ♀; *c*, ♂; *d* and *e*, palpus of ♂ in two positions.
187. „ *cornigera*. *a*, ♂; *b* and *c*, palpus of ♂ in two positions.
- 188.* „ *longipalpis*. *a*, ♂; *b*, ♀; *c*, front view of cephalo-thorax and falces; *d* and *e*, palpus of ♂ in two positions.
- 189.* „ *fusca*. *a*, ♂; *b*, ♀; *c*, *d* and *e*, palpus of ♂ in three positions.
- 190.* „ *agrestis*. *a*, ♂; *b*, ♀; *c*, *d* and *e*, palpus of ♂ in three positions.
191. „ *vigilax*. *a*, ♂; *b* and *c*, palpus of ♂ in two positions.
- 192.* „ *tuberosa*. ♂.
193. „ *trilineata*. *a*, ♂; *b*, ♀; *c*, palpus of ♂.
194. „ *rubella*. *a*, ♂; *b* and *d*, palpus of ♂ in two positions; *c*, ♀.
195. „ *variegata*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
196. „ *pilosa*. ♀.
197. „ *pallidula*. ♀.
198. „ *carinata*. ♀.
199. „ *herbigrada*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
200. „ *abnormis*. *a*, ♂; *b*, palpus of ♂.
201. „ *rubripes*. *a*, ♀; *b*, ♂; *c*, palpus of ♂.
202. „ *dubia*. *a*, ♂; *b*, palpus of ♂.

* See also Plate XXII.



186. *N. graminicola*, ♀. 187. *N. cornigera*, ♂. 188. *N. longipalpis*, ♀. 189. *N. fusca*, ♀. 190. *N. agrestis*, ♀. 191. *N. vigilax*, ♂. 192. *N. tuberosa*, ♂. 193. *N. trilineata*, ♀. 194. *N. rubella*, ♀. 195. *N. variegata*, ♀. 196. *N. pilosa*, ♀. 197. *N. pallidula*, ♀. 198. *N. carinata*, ♀. 199. *N. herbigrada*, ♀. 200. *N. abnormis*, ♂. 201. *N. rubripes*, ♀. 202. *N. dubia*, ♂.

DESCRIPTION OF PLATE XX

- Fig. 203. *W. acuminata*. a, b, c, front view of cephalo-thorax and face of ♀; d, side view of cephalo-thorax of ♀; e, side view of cephalo-thorax of ♂; f, face, maxilla, labium, and sternum of ♂; g, front view of cephalo-thorax of ♂; h and i, palpus of ♂ in two positions.
204. *capitata*. a, b, c, palpus of ♂; d, profile of cephalo-thorax and face.
205. *capitata*. a, b, c, profile of cephalo-thorax and face; d, palpus of ♂.
206. *capitata*. a, b, c, palpus of ♂; d, profile of cephalo-thorax and face.
207. *capitata*. a, b, c, profile of cephalo-thorax and face; d, palpus of ♂.
208. *capitata*. a, b, c, side view of cephalo-thorax and face; d and e, palpus of ♂ in two positions.
209. *capitata*. a, b, c, side view of cephalo-thorax and face; d and e, palpus of ♂ in two positions.
210. *capitata*. a, b, c, profile of cephalo-thorax and face; d, palpus of ♂.
211. *capitata*. a, b, c, profile of cephalo-thorax and face; d, palpus of ♂.
212. *capitata*. a, b, c, profile of cephalo-thorax and face; d, palpus of ♂.
213. *capitata*. a, b, c, profile of cephalo-thorax and face; d, palpus of ♂.
214. *capitata*. a, b, c, side view of cephalo-thorax and face; d, palpus of ♂.

See also Plate XXII.

DESCRIPTION OF PLATE XX.

FIG.

203. *Walckenaera acuminata*. *a*, ♂; *b*, ♀; *c*, front view of cephalo-thorax and falces of ♂; *d*, side view of cephalo-thorax of ♂; *e*, side view of cephalo-thorax of ♀; *f*, falces, maxillæ, labium, and sternum of ♀; *g*, front view of cephalo-thorax of ♀; *h* and *i*, palpus of ♂ in two positions.
204. „ *cuspidata*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, profile of cephalo-thorax and falx.
205. „ *monoceros*. *a*, ♂; *b*, profile of cephalo-thorax and falx; *c*, palpus of ♂.
206. „ *Hardii*. *a*, ♂; *b*, palpus of ♂; *c*, profile of cephalo-thorax and falx.
207. „ *unicornis*. *a*, ♂; *b*, ♀; *c*, profile of cephalo-thorax and falx; *d*, palpus of ♂.
208. „ *obtusa*. *a*, ♂; *b*, side view of cephalo-thorax and falces; *c* and *d*, palpus of ♂ in two positions.
209. „ *fuscipes*. *a*, ♂; *b*, side view of cephalo-thorax and falces; *c* and *d*, palpus of ♂ in two positions.
- 210.* „ *punctata*. *a*, ♀; *b*, ♂; *c*, profile of cephalo-thorax.
211. „ *parallela*. *a*, ♂; *b*, ♀; *c*, profile of abdomen and cephalo-thorax; *d*, front view of cephalo-thorax and falces; *e*, palpus of ♂.
212. „ *obscura*. *a*, ♂; *b* and *d*, palpus of ♂ in two positions; *c*, profile of cephalo-thorax and falx.
213. „ *flavipes*. *a*, ♂; *b*, ♀; *c* and *d*, palpus of ♂ in two positions; *e*, front view of cephalo-thorax and falces.
214. „ *turgida*. *a*, ♂; *b*, ♀; *c*, side view of cephalo-thorax.

* See also Plate XXII.



203. *W. acuminata*, ♀♂. 204. *W. cuspidata*, ♀♂. 205. *W. monstrosa*, ♂. 206. *W. Hardii*, ♂. 207. *W. unicornis*, ♀♂.
 208. *W. obtusa*, ♂. 209. *W. fuscipes*, ♂. 210. *W. punctata*, ♀♂. 211. *W. parallela*, ♀♂. 212. *W. obscura*, ♂.
 213. *W. flavipes*, ♀♂. 214. *W. turgida*, ♀♂.

DESCRIPTION OF PLATE XXI.

FIG.

215. *Walckenaëra atra*. *a*, ♂; *b*, profile of cephalo-thorax.
216. „ *aggeris*. *a*, ♂; *b*, ♀; *c*, profile of cephalo-thorax; *d*, front view of cephalo-thorax and falces; *e* and *f*, palpus of ♂ in two positions.
217. „ *hiemalis*. *a*, ♂; *b*, ♀; *c*, side view of cephalo-thorax and falces; *d*, profile of cephalo-thorax and falx; *e* and *f*, palpus of ♂ in two positions.
218. „ *bifrons*. *a*, ♂; *b*, ♀; *c*, side view of cephalo-thorax and falces; *d* and *e*, palpus of ♂ in two positions.
219. „ *parva*. *a*, ♂; *b*, ♀; *c*, profile of cephalo-thorax.
220. „ *exilis*. ♂.
221. „ *depressa*. *a*, ♂; *b*, ♀; *c*, profile of abdomen, cephalo-thorax, falx, and maxilla; *d* and *e*, palpus of ♂ in two positions.
222. „ *pratensis*. *a*, ♂; *b*, ♀; *c* and *d*, palpus of ♂ in two positions; *e*, side view of cephalo-thorax, eyes and falces.
223. „ *humilis*. *a*, ♂; *b*, profile of cephalo-thorax and falx; (beneath it is a front view of cephalo-thorax and falces;) *c* and *d*, palpus of ♂ in two positions.
224. „ *cristata*. *a*, ♂; *b*, profile of cephalo-thorax and falx; *c* and *d*, palpus of ♂ in two positions.
225. „ *antica*. *a*, ♂; *b*, ♀; *c* and *d*, palpus of ♂ in two positions; *e*, profile of cephalo-thorax and falx; *f*, enlarged figure of anterior part of cephalo-thorax.
226. „ *saxicola*. *a*, ♂; *b*, ♀; *c*, *d*, and *e*, palpus of ♂ in three positions; *e*, profile of cephalo-thorax and falx.
227. „ *pumila*. *a*, ♂; *b*, profile of cephalo-thorax and falx; *c* and *d*, palpus of ♂ in two positions.
228. „ *picina*. *a*, ♂; *b*, profile of cephalo-thorax and falx; *c* and *d*, palpus of ♂ in two positions.



215. *W. atra*, ♂. 216. *W. aggeris*, ♀♂. 217. *W. hiemalis*, ♀♂. 218. *W. bifrons*, ♀♂. 219. *W. parva*, ♀♂.
 220. *W. exilis*, ♂. 221. *W. depressa*, ♀♂. 222. *W. pratensis*, ♀♂. 223. *W. humilis*, ♂. 224. *W. cristata*, ♂.
 225. *W. antica*, ♀♂. 226. *W. saxicola*, ♀♂. 227. *W. pumila*, ♂. 228. *W. picina*, ♂.

DESCRIPTION OF PLATE XXII.

FIG.

229. *Walckenaera fastigata*. *a*, ♂; *b*, profile of cephalo-thorax.
230. „ *nemoralis*. *a*, ♂; *b*, profile of cephalo-thorax; *c* and *d*, palpus of ♂ in two positions.
231. „ *ludicra*. *a*, ♀; *b*, ♂; *c* and *d*, palpus of ♂ in two positions; *e*, front view of cephalo-thorax and falces; *f*, profile of cephalo-thorax and falx.
232. „ *frontata*. *a*, ♂; *b*, front view of cephalo-thorax and falces; *c*, profile of cephalo-thorax; *d* and *e*, palpus of ♂ in two positions.
233. *Pachygnatha Clerckii*. *a*, ♂; *b*, ♀; *c*, profile of cephalo-thorax and falx; *d*, falces, maxillæ, labium, and sternum; *e*, front view of falces and eyes; *f* and *g*, palpus of ♂ in two positions.
234. „ *Listeri*. *a*, ♂; *b*, ♀; *c*, palpus of ♂.
235. „ *Degeerii*. *a*, ♂; *b*, ♀; *c*, palpus of ♂.
- A. *Walckenaera punctata*. *a*, profile of cephalo-thorax and falx; *b* and *c*, palpus of ♂ in two positions.
- B. *Neriene tuberosa*. *a*, profile of cephalo-thorax and falx; *b* and *c*, palpus of ♂ in two positions.
- C. „ *longipalpis*. *a*, palpus of ♂, upper side; *b*, palpus of ♂, under side; *c*, palpus of ♂, outside profile.
- D. „ *agrestis*. *a*, palpus of ♂, under side; *b*, palpus of ♂, outside profile; *c*, palpus of ♂, upper side.
- E. „ *fusca*. *a*, palpus of ♂, under side; *b*, palpus of ♂, upper side; *c*, palpus of ♂, outside profile.



229. *W. fastigata*, ♂. 230. *W. nemoralis*, ♂. 231. *W. ludicra*, ♀. 232. *W. frontata*, ♂.
 233. *P. Clerckii*, ♀. 234. *P. Listeri*, ♀. 235. *P. Degeerii*, ♀.

DESCRIPTION OF PLATE XXIII.

FIG.

236. *Epëira quadrata*. *a*, ♂; *b*, ♀; *c*, ♀, variety; *d*, ♀, natural size; *e*, profile of cephalo-thorax and falx; *f*, ♂, natural size; *g*, termination of tarsus, showing claws and toothed hairs; *h*, tarsus, showing hairs, &c.; *j*, front view of cephalo-thorax and falces; *k* and *l*, palpus of ♂, in two positions; the figure to the right of *l* represents the underside of the falces, maxillæ, labium and sternum.
237. „ *apoclista*. *a*, ♀; *b*, ♀, variety; *c*, ♂; *d*, ♂, variety; *e* and *f*, palpus of ♂ in two positions; *g*, ♂, natural size; *h*, ♀, natural size.
238. „ *sericata*. *a*, ♀; *b*, ♂; *c*, ♀, natural size; *d*, *e*, and *f*, palpus of ♂ in three positions.



236. *E. quadrata*, ♀. 237. *E. apoclista*, ♀. 238. *E. sericata*, ♀.

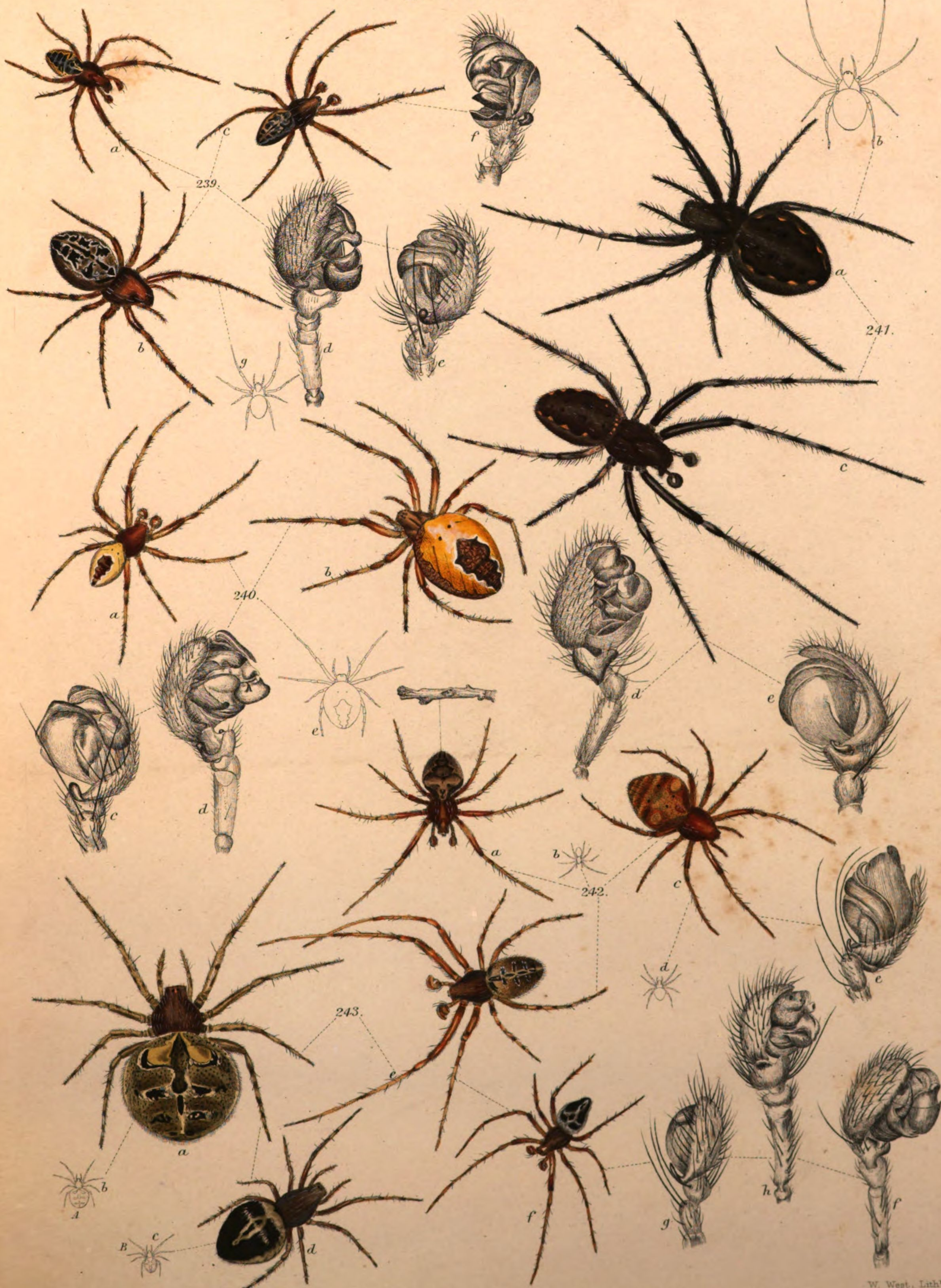
DESCRIPTION OF PLATE XXIV

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DESCRIPTION OF PLATE XXIV.

FIG.

239. *Epëira patagiata*. *a*, ♂; *b*, ♀; *c*, ♂, variety; *d*, palpus of ♂, under side; *e*, palpus of ♂, upper side; *f*, palpus of ♂, outside profile; *g*, ♀, natural size.
240. „ *scalaris*. *a*, ♂; *b*, ♀; *c*, palpus of ♂, upper side; *d*, palpus of ♂, under side; *e*, ♀, natural size.
241. „ *umbratica*. *a*, ♀; *b*, ♀, natural size; *c*, ♂; *d*, palpus of ♂, under side; *e*, palpus of ♂, upper side.
242. „ *agalena*. *a*, ♂; *b*, ♂, natural size; *c*, ♀; *d*, ♀, natural size; *e*, palpus of ♂, upper side; *f* (beneath *e*), palpus of ♂, under side.
243. „ *solers*. *a*, ♀; A, *b*, ♀, natural size; B, *c*, ♀, variety, natural size; *d*, ♀, variety; *e*, ♂; *f*, ♂, variety; *g*, palpus of ♂, inside profile; *h*, palpus of ♂, under side.



DESCRIPTION OF PLATE XXX.

338. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
339. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
340. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
341. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
342. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
343. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
344. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
345. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
346. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
347. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
348. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
349. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
350. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.
351. *Spizella socialis*. a, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z, showing position when expanded; a, 2, natural size.

DESCRIPTION OF PLATE XXV.

FIG.

244. *Epëira similis*. *a*, ♀; *b*, ♂; *c* and *d*, palpus of ♂, in two positions; *e*, ♀, variety; *f*, ♀, showing position when suspended; *g*, ♀, natural size.
245. „ *calophylla*. *a*, ♀; *b*, ♂; *c*, palpus of ♂; *d*, ♀, natural size.
246. „ *acalypha*. *a*, ♀; *b*, profile of ♀; *c*, ♂; *d*, palpus of ♂; *e*, ♀, natural size.
247. „ *cucurbitina*. *a*, ♂; *b*, ♀; *c*, ♀, natural size; *d* and *e*, palpus of ♂ in two positions; *f*, cocoon *in situ*.
248. „ *bella*. *a*, ♂; *b*, ♀; *c*, ♀, natural size; *d*, *e*, and *f*, palpus of ♂ in three positions.
249. „ *lutea*. *a*, ♀; *b*, ♂; *c*, sexual organs of ♀, in profile; *d*, palpus of ♂.
250. „ *ceropegia*. *a*, ♂; *b*, ♀; *c*, *e*, and *f*, palpus of ♂ in three positions; *d*, tibia of second pair of legs of ♂, showing spines.
251. „ *adiantha*. *a*, ♀; *b*, ♂; *c*, ♀, natural size; *d*, *e*, and *f*, palpus of ♂ in three positions.

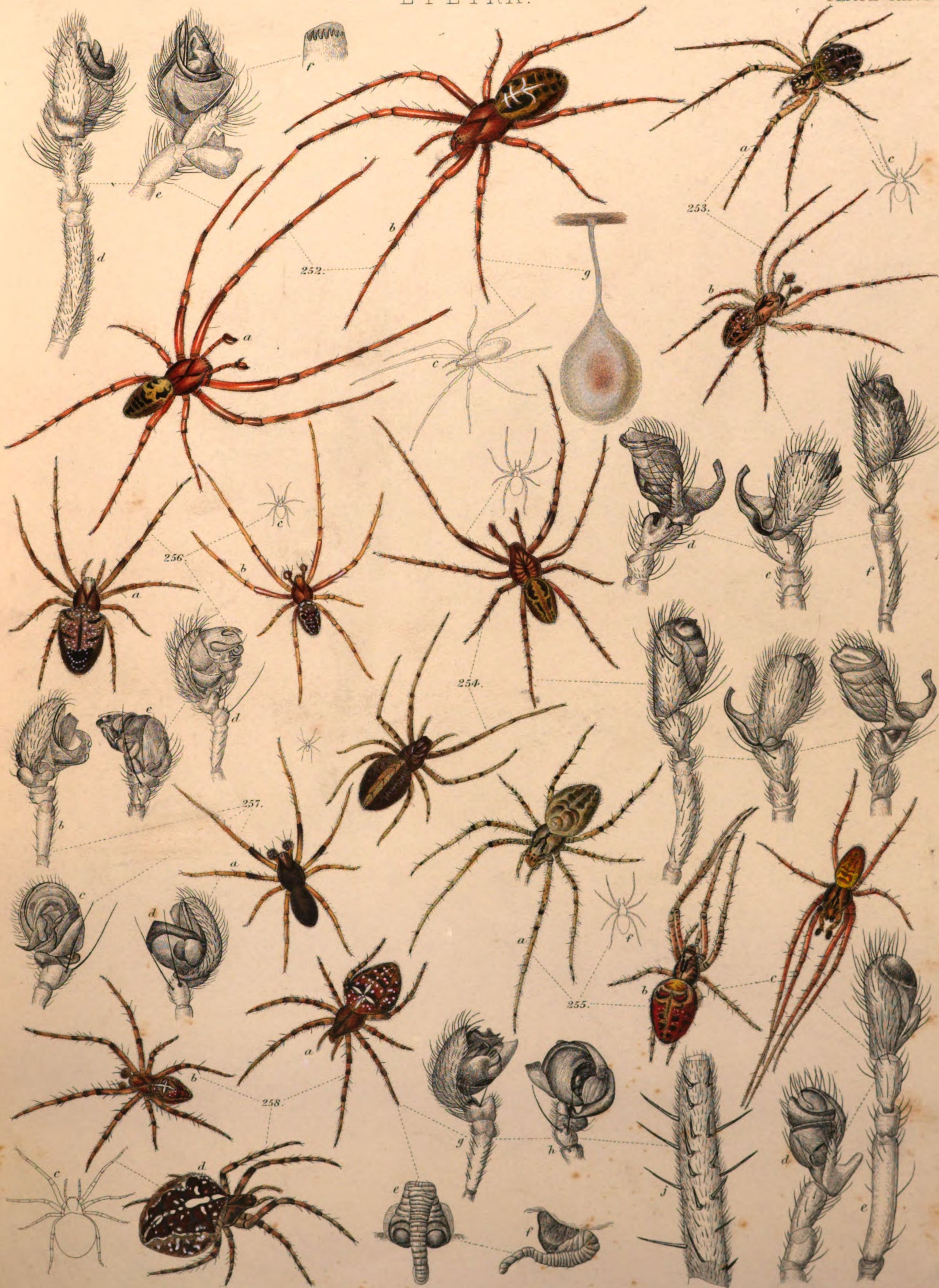


244. *E. similis*, ♀♂. 245. *E. calophylla*, ♀♂. 246. *E. acalypha*, ♀♂. 247. *E. cucurbitina*, ♀♂.
 248. *E. bella*, ♀♂. 249. *E. lutea*, ♀♂. 250. *E. ceropegia*, ♀♂. 251. *E. adianta*, ♀♂.

DESCRIPTION OF PLATE XXVI.

FIG.

252. *Epëira fusca*. *a*, ♂; *b*, ♀; *c*, ♀, natural size; *d*, palpus of ♂, under side; *e*, palpus of ♂, outside profile; *f*, extremity of process in palpal organ of ♂; *g*, cocoon, natural size.
253. „ *antriada*. *a*, ♀; *b*, ♂; *c*, ♀, natural size; *d*, palpus of ♂, outside profile; *e*, palpus of ♂, inside profile; *f*, palpus of ♂, under side.
254. „ *celata*. ♂ and ♀, and palpus of ♂ drawn in the same positions as those of *Ep. antriada*.
255. „ *inclinata*. *a*, ♀; *b*, ♀, variety; *c*, ♂; *d* and *e*, palpus of ♂ in two positions; *f* ♀, natural size.
256. „ *albimacula*. *a*, ♀; *b*, ♂; *c*, ♀, natural size; *d*, palpus of ♂, under side; *e*, palpus of ♂, upper side.
257. „ *anthracina*. *a*, ♂; *b*, palpus of ♂, under side; *c*, palpus of ♂, outside profile; *d*, palpus of ♂, upper side.
258. „ *diadema*. *a*, ♀; *b*, ♂; *c*, ♀, natural size; *d*, ♀, variety; *e*, front view of sexual organs of ♀; *f*, profile of sexual organs of ♀; *g*, palpus of ♂, under side; *h*, palpus of ♂, upper side; *j*, tibial joint of second pair of legs of ♂, showing spines.



252. *E. fusca*, ♀♂. 253. *E. antriada*, ♀♂. 254. *E. celata*, ♀♂. 255. *E. inclinata*, ♀♂.
 256. *E. albimacula*, ♀♂. 257. *E. anthracina*, ♂. 258. *E. diadema*, ♀♂.

DESCRIPTION OF PLATE XXVII.

FIG.

259. *Epëira angulata*. *a*, ♀; *b*, ♀, side view; *c*, sexual organs of ♀; *d*, ♂; *e*, ♀, natural size.
260. „ *bicornis*. *a*, ♂; *b*, ♀, natural size; *c*, ♀; *d*, side view of ♀; *e*, abdomen of ♂, showing exact pattern of markings; *f*, palpus of ♂.
261. „ *conica*. *a*, ♀; *b*, ♀, variety; *c*, ♀, natural size; *d*, ♂; *e*, palpus of ♂; *f*, front view of falces, cephalo-thorax, and eyes.
262. „ *tubulosa*. *a*, ♂; *b*, ♀; *c*, palpus of ♂, under side; *d*, palpus of ♂, outside profile; *e*, ♀, natural size; *f*, web and cocoon, natural size.
263. „ *calva*. *a*, ♂; *b*, ♀; *c*, palpus of ♂, outside profile; *d*, palpus of ♂, under side.
264. „ *Herii*. *a*, ♂; *b*, ♀; *c*, ♀, natural size.
265. *Tetragnatha extensa*. *a*, ♂; *b*, ♂, variety; *c*, ♀, in natural position; *d*, ♀; *e* and *f*, palpus of ♂ in two positions; *g*, falces, maxillæ, labium, and sternum; *h*, side view of falces and eyes of ♂.



A. Hollick sc. ad nat.

W. West, Lith.

259. *E. angulata*, ♀♂. 260. *E. bicornis*, ♀♂. 261. *E. conica*, ♀♂. 262. *E. tubulosa*, ♀♂.
263. *E. calva*, ♀♂. 264. *E. Herii*, ♀♂. 265. *T. extensa*, ♀♂.

DESCRIPTION OF PLATE XXVIII

206. *Thysanotus ruficornis*. a, σ ; b, σ ; c, profile of cephalo-thorax, and lab. of σ ; d, lab. of σ ; e, front view of cephalo-thorax, and lab. of σ ; f, γ and δ palpus of σ in two positions.
207. *Thysanotus ruficornis*. a, σ ; b, σ ; c, profile of lab. and part of cephalo-thorax of σ ; d, γ and δ palpus of σ in two positions; e, front view of lab. and cephalo-thorax of σ .
208. *Thysanotus ruficornis*. a, σ ; b, σ ; c, front view of lab. and eyes; d, σ ; e, natural size; f, γ and δ palpus of σ in two positions.
209. *Thysanotus ruficornis*. a, σ ; b, σ ; c, lab. and sternum; d, front view of lab. and eyes; e, profile of cephalo-thorax, and lab. of σ .
210. *Thysanotus ruficornis*. a, σ ; b, σ ; c, natural size; d, γ and δ palpus of σ in two positions.

DESCRIPTION OF PLATE XXVIII.

FIG.

266. *Dysdera erythrina*. *a*, ♀; *b*, ♂; *c*, profile of cephalo-thorax, and falx of ♂; *d*, falces, maxillæ, labium, and sternum of ♂; *e*, front view of cephalo-thorax, and falces of ♂; *f* and *g*, palpus of ♂ in two positions.
267. „ *rubicunda*. *a*, ♂; *b*, ♂, natural size; *c*, profile of falx, and part of cephalo-thorax of ♂; *d* and *e*, palpus of ♂ in two positions; *f*, front view of falces and cephalo-thorax of ♂.
268. „ *Homborgii*. *a*, ♀; *b*, front view of falces and eyes; *c*, ♀, natural size; *d*, ♂, natural size; *e*, ♂; *f* and *g*, palpus of ♂ in two positions.
269. *Segestria perfida*. *a*, ♀; *b*, falces, maxillæ, labium, and sternum; *c*, front view of falces and eyes; *d*, profile of cephalo-thorax and falx.
270. „ *senoculata*. *a*, ♂; *b*, ♂, natural size; *c*, ♀; *d* and *e*, palpus of ♂ in two positions.



266. *D. erythrina*, ♀♂. 267. *D. rubicunda*, ♂. 268. *D. Hombergii*, ♀♂.
 269. *S. perfida*, ♀♂. 270. *S. senoculata*, ♀♂.

DESCRIPTION OF PLATE XXIX.

FIG.

270. *Segestria senoculata*. *a*, ♀; *b*, ♀, natural size; *c*, profile of cephalo-thorax, and falx; *d*, front view of cephalo-thorax, and falces.

271. *Oonops pulcher*. *a*, ♀; *b*, ♂; *c*, position of eyes on cephalo-thorax; *d* and *e*, palpus of ♂ in two positions; *f*, maxillæ, labium, and sternum.

272. *Scytodes thoracica*. *a*, ♀; *b*, maxillæ, labium, and sternum; *c*, ♀, natural size; *d*, profile of cephalo-thorax; *e*, front view of cephalo-thorax.



270. *S. senoculata*, ♀. 271. *O. pulcher*, ♀♂. 272. *Scytodes thoracica*, ♀.

Blackwall, John

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